

Digitized by the Internet Archive
in 2017 with funding from
CLIR

Pearson, A. K.

1949

Catalogue

#601-669

misc. Calif.

A.K. Pearson
1949

Aug. 10, 1949

1 mi S. Bayside, Humboldt Co., Calif

- 601 Sorex vagrans vagrans 98.42.13.7 ♂
- 602 Myotis ^{yumanensis saturatus} taken 1.3 mi S. Miranda, 77.33.9.13 ♀
Humboldt Co
no emb.
- 603 Sorex pacificus ^{pacificus} taken 7.3 mi E of Bayside 154.68.18.10 ♀
caught along redwood stream. Much mammary tissue.
- 604 Phenacomys allipes 180.73.19.13 ♀
taken 5½ mi E Bayside by old logging camp.
Much mammary tissue. No emb.
- 605 Sorex hendersoni hendersoni 144.67.20.9 ♀
taken 7.3 mi E Bayside, along stream in redwoods.
no emb.
- 606 Zapus trinotatus eureka 215.130.32.14 ♂
taken 7.3 mi E Bayside, along road. testis 6.5 mm.
not any fat.
- 607 Sorex pacificus pacificus 158.68.17.10 ♀
taken 5½ mi E Bayside, old logging camp.
Large u.g. no emb.

Aug. 12, 1949

- 608 Microtus californicus constrictus 159.51.21.13 ♂
taken 2.3 mi E Bayside
- 609 Sorex pacificus pacificus 135.63.17.9 ♂
taken 2.8 mi E Bayside Testis 2 mm.

12 mi S. Korb, Humboldt Co., Calif

Aug. 13

- 610 Microtus oregoni 125.35.17.9 ♀
2 emb. left horn; one right. 6.5 mm diam.

- 611 Sorex pacificus pacificus 156.64.17.10 ♀
much mammary tissue; no ends.
- 612 Zapus trinotatus eureka —.146.32.— ♂
Badly eaten. No skin. Skull scored. White tip on tail.

August 14, 1949

- 613 Sorex townsendi ^{humboldtensis} ♂ testis 4.5 mm 124.56.14.7 ♂
- 614 Zapus trinotatus eureka testis 6 mm. Not much fat. 217.134.31.13 ♂
- 615 Sorex pacificus ^{pacificus} ♂ testis 8 mm. 152.66.19.10 ♂

Falk, Humboldt Co., Calif

Aug. 15, 1949

- 616 Zapus trinotatus eureka testis 6 mm 217.137.31.13 ♂
- 617 Microtus californicus constructus testis 6 mm 159.48.20.13 ♂

- 618 Antrozous pallidus ^{pacificus} testis 10 mm. 122.48.14.32 ♂
taken 1.4 mi by road 101 N of San Benito - Monterey Co. line

San Benito Co., Calif.

Aug. 26; killed Aug 28

- 619 Myotis thysanodes ^{thysanodes} testis 6 mm 92 x 41 x 11 x 19 ♂
caught Lewis's Barn, Inverness, Marin Co., Calif. caught Sept 10
Killed Sept 16

- 620 Myotis volans ^{longicus} ♂ Big accessories; much fat; large pigmented epididymis. 99 x 44 x 9 x 13 ♂
taken Pit River chalk tunnel, 3000 ft., 11 1/2 mi NE
Burney, Shasta Co., Calif. caught Oct 19
Killed Oct 22.

- 621 Myotis lucifugus ^{carissima} ♂ Testis 2 mm. little fat 83 x 38 x 9 x 14 ♂
taken Cassel, Shasta Co., Calif. small accessories caught Oct 19
Killed Oct 22

- 622 Myotis volans ^{longicus} ♂ testis 2.5 mm accessories large 96.47.8.13 ♂
taken as 620 above.

- 623 Myotis thysanodes ^{thysanodes} testes 4 mm, grey, fleshy. 95 x 41 x 10 x 13 ♂
700 ft.
taken 2 mi N Rionido, Sonoma Co., Calif. caught Nov 23
Killed Nov. 25
Torpid under paper of barn at noon. Some fat

5 mi N. Novato, San Antonio Creek, Marin Co., Calif.

Dec. 6, 1949

- 624 Reithrodontomys megalotis longicauda 4.5 mm testis 145 x 77 x 16 x 14 ♂
625 Reithrodontomys megalotis longicauda 139 x 74 x 17 x 14
626 Reithrodontomys megalotis longicauda 5 mm testis 127 x 65 x 16 x 13 ♂
627 Reithrodontomys megalotis longicauda 3.5 mm testis 136 x 69 x 17 x 13 ♂

Jan. 5, 1950

Knockville, Napa Co., Calif.

- 628 Myotis californicus ^{californicus} taken Jan 2, 7:30 PM. 77 x 37 x 8 x 13 ♀

Fresmont Peak, Monterey Co., Calif.

Jan. 20, 1950

- 629 Myotis thysanodes thysanodes taken Jan. 19. 88 x 37 x 10 x 18 ♂
in mine tunnel; testes 2 1/2 mm; accessories quite large.
630 Myotis volans longicus testes 2.5 mm; accessories tiny 100 x 45 x 9 x 14 ♂
in same tunnel as 629

Subway Cave, near Old Station, 4300 ft., Shasta Co., Calif.

February 11, 1950

- 631 Myotis subulatus ^{melanochinus} no emb.; little fat. 84 x 36 x 7 x 14 ♀
Hanging in cluster of 14
Corynorhinus + 632
632 Myotis subulatus ^{melanochinus} as 631 89 x 43 x 7 x 14 ♀
633 Myotis subulatus ^{melanochinus} hanging singly, Subway south 87 x 42 x 7 x 14 ♂
634 Myotis subulatus ^{melanochinus} no emb.; hanging singly, Subway, south 87 x 41 x 7 x 15 ♀

1950

- 635 Myotis subulatus ^{melanochinus} 1 Noemb. Major singl 87 x 44 x 7 x 15 ♀
in Subway, south.

Aetna Mine, Napa Co., Calif.

- 636 Myotis thysanodes ^{thysanodes} 1 Taped, at noon. 93 x 41 x 9 x 17 ♂
Testes 2.5 mm; Epidid. conspicuous in Taken Feb. 16
tail membrane. Killed Feb. 18

3/4 mi E. Jctn. Middle + North fork of American River
700 ft., Eldorado Co., Calif.

April 16, 1950

- 637 Peromyscus boylii boylii 200 x 111 x 24 x 19 ♀
no emb; big nipples; some mammary
- 638 Peromyscus boylii boylii no emb 211 x 121 x 23 x 20 ♀
- 639 Peromyscus maniculatus ^{gambelli} 1 Preg: 2 rt; 3 left 151 x 75 x 19 x 18 ♀
- 640 Peromyscus ~~truei~~ ^{boylii boylii} 1 Preg 1 rt, 2 left. 204 x 112 x 23 x 19 ♀
- 641 Peromyscus boylii boylii no emb. 195 x 99 x 22 x 19 ♀

from 1/4 mi E + 1/4 mi N. Jct. north + middle fork
of American River, 1000', Eldorado Co., Calif.
April 17, 1950

1/4 mi E Jct north + middle fork American River,
Eldorado Co., Calif.

April 17, 1950

642. Eptesicus fuscus bernardinus 116 x 46 x 10 x 16 ♀
- 643 Myotis yumanensis no emb. 84 x 38 x 9 x 14 ♀
- 644 Myotis yumanensis very small ut. 84 x 39 x 9 x 14 ♀
- 645 Myotis yumanensis 78+ x 35+ x 9 x 13 ♀
tip of tail missing

Knoxville, 1262', Napa Co., Calif.

June 1, 1950

646 Corynorhinus rafinesquii ♂

3257

Banded 49-123512. Caught night-roosting 11:30 PM.

Epidid. conspicuous in tail membrane. Testis 6.5 mm.

Accessories 4 mm across. Stomach contents pickled.

Manhattan Mine, 2000 ft., 2 mi NW Knoxville,

Napa Co., Calif. June 2, 1950.

647 Corynorhinus rafinesquii ♂

3258

Alone, awake in Mary's Tunnel 8:30 AM.

Epidid. conspicuous. Testis 6 mm., Accessories 3.5 mm across. Epidid. 6 mm?

648 Corynorhinus rafinesquii ♂

3259

Alone, torpid in Catacombs. 9 AM. Epidid.

conspicuous. Testis 5.5, epidid 6 mm. Accessories 3 mm across.

649 Corynorhinus rafinesquii ♂

3260

In Abyss cave with a single ♀ Cory. Awake, 8 AM.

Epid 8 mm, conspicuous. Testis floccid, 7 mm. Accessories 4 mm

650 Corynorhinus rafinesquii ♀

3262

Torpid 8 AM in Tunnel near 20-house hole.

Banded 49-123331. Nipple large. Vaginal opening small.

Normally in either horn.

651 Corynorhinus rafinesquii ♀

3263

As 650. Torpid. Banded 49-123559

Rt. horn larger than left. No lump.

~~651~~

Aetna Mines, Napa Co., Calif.

June 2, 1950

652 Corynorhinus rafinesquii ♀

3264

Hanging alone, torpid in upper

tunnel when heading colony was. 3:30 PM. Banded C-161797

Med. nipple. Rt. horn larger than left.

1950-51

1.3 mi S Inverness, Main Co., Calif

June 5, 1950

- 3265

- 3266

Aetna Mine, Inyo Co. Calif.

June 8, 1950

- 3261

Baird Slope, 13.7 N, 5.9 mi E Redding, ^{1100 ft.} Shasta Co., Calif.

March 10, 1951

656. Myotis subulatus melanorhinus 73 x 34 x 6 x 15 ♂
flying on edge of lake at 3:30 PM. Landed on rock on
beach + was captured. Skinned March 13. Testis 2 —.

- 657 Peromyscus Plantations, no obs. 208 x 111 x 20 x 18 ♀

- 658 Peromyscus 208 x 112 x 22 x 19

Halton Ranch, 1.3 mi SE Cannell, ^{100 ft.} Monterey Co., Calif

April 22, 1951

- 659 Myotis thysanodes ^{thysanodes} A Single fetus, 20 mm CR. 96 x 41 x 10 x 20 ♀

1951

6 mi NNE Borrego Springs, 500 ft., San Diego Co., Calif.

April 27, 1951

- 660 Peromyscus eremicus 9 mm testis 166 x 97 x 18 x 19 ♂
 661 Peromyscus eremicus ut. stout; no emb. 175 x 101 x 18 x 20 ♀

3.5 mi NNW Mojave, 3200 ft., Kern Co., Calif.

April 28, 1951

- 663 Peromyscus maniculatus Testis 8 mm. 155 x 67 x 20 x 18 ♂
 664 Onychomys Testis 7 mm 124 x 44 x 19 x 16 ♂
 665 Neotoma no emb. 264 x 106 x 26 x 28 ♀

Pit River, 1000 ft., 5.5 mi NW Round Mt., Shasta Co., Calif. Aug. 11, 1951

- 666 Sorex vagrans amoenus 106 x 40 x 13 x 8 ♂

Hat Creek, 4600 ft., 2 mi SW old Station, Shasta Co., Calif.

Aug. 12, 1951

- 667 Eutamias amoenus amoenus no emb. 215 x 98 x 35 x 21 ♀
 668 Eutamias speciosus pater prominent mammae no emb. 223 x 95 x 36 x 21 ♀
 669 Eutamias amoenus amoenus no emb. 182 x 78 x 32 x 16 ♀

A. R. Pearson

Journal

August, 1949 to - August 1951

Miscellaneous Localities within
California

Pearson, A.K.

1949-51

Journal

misc. Calif.

1949

Aug. 9, 1949 1 mi S. Bayside, Humboldt Co., Calif.

Left Berkeley 6 AM with Marietta Voge. Stopped at one last house near Miranda, Humboldt Co., and found a Myotis lucifugus under a tin plate in the roof. Two more got away. Arrived at Eureka about 2:30 and spent almost 2 hours trying to find a good place to trap. We finally ended up in a fallow pasture with a little clump of redwoods on it and set out all our snap traps - Marietta 41 and me 77. At dusk we readied ourselves with our slingshot - got one shot at a big bat, and saw two others, but didn't get any. Ran our traps 10 PM.

	<u>10 PM</u>	<u>6 AM</u>
AKP 77 traps	4 microtus	2 Reithro 10 Mic
Marietta 41 traps	3 Mic. 2 Reithro	1 Sorex 1 Mic.

We only skinned the Sorex.

Aug. 10, 1949 The owner of our meadow came to see us this morning and had great tales to tell of his trapping experiences in the Yukon territory - 303 shrews in one week! He had a box set for them with 2 wooden planks leading into it, and arrived at the above figure by counting the tails and shrews in the box each day. He caught them in the cabin. We went up to his sister's house where there was supposedly a heavy infestation of bats and got one Myotis from the attic. Also some plums for his orchard.

Thence proceeded to a dirt road leading east out of Bayside which wound up through some redwoods,

1949

cypress, and alders (?) along a creek, and set out 205 traps along the ~~creek~~ stream & the road. Logging operations further up the road. Some of these traps were set out by an abandoned logging community in a deep canyon with lots of alders, big firs, and nettles. He looked in all the buildings for bats, but found none. They were pretty far gone - roof falling in, ferns growing in the middle of the floor, etc.

Aug. 11, 1949 Saw no bats last evening. Our lies last night & this morning yielded:

<u>up the road</u>	6 PM	10 PM	6 AM
Mixed live + snap.			
Manilla	—	15 <i>Geophilus</i> 1 <i>Pero.</i>	6 <i>Pero</i> 3 <i>Sorex pacif.</i> 1 <i>Sorex tr.</i>
Me	1 <i>Sorex pacificus</i>	not run	1 <i>Sorex bendirii</i> 7 <i>Pero</i> 5 <i>Sorex pacificus</i> 1 <i>Zapus</i>
at the logging camp:			
Manilla (live traps)			3 <i>Pero.</i>
Me (snaps)			1 <i>Pero</i> 4 <i>S. pacificus</i> 1 <i>Phacops</i>

We went down the road towards Bayside for about 2-3 miles, to the Stevenson's place - Mr Stevenson had invited us yesterday to set traps in his redwood creek if we wanted to. So about 8:30 we set all our snap traps there - 111 of them, then spent the morning skinning etc.

On our way down the road we stopped at a bat house & missed capturing 1 lone *Corynorhinus* in the attic.

1949

After skinning we went into Arcata for a few errands, saw a spotted skunk wandering along the road on our way back. He was quite unconcerned about our interest in him, except for an occasional flutter of his tail in our direction. We found a good spot further downstream on this road to camp in — redwood, alders, little creek — and set out all 80+ of our live traps. A check on our snap traps at 6 PM brought in 1 Sorex pacificus each.

August 12, 1949 2.3 mi E Bayside, Humboldt Co., Calif

Traps along redwood stream yielded only 2 more Sorex pacificus each. Near camp we caught:

Mainella: 2 Pero
2 Sorex pacificus

Me: 4 Pero
4 Sorex pacificus
1 Microtus
1 Sorex thomomys

We checked on the bat house again (4 1/4 mi from Bayside) and again missed a single Corynorhinus.

More skinning before lunch + then we broke camp. Took route 299 for a little ways, then through Korbet to another campsite — near Maple Creek. There are maples here, + alders + some redwood + firs. Also more grass so it should be interesting trapping.

While we were picking up our traps along the very steep redwood creek this AM I saw a Zapus under a raspberry bush about 2 yards from the stream. Very little grass. He was quite unexcited about me. 2

pounced but he got away under the thorns.

Tonight a coon has been setting off my traps under a cement bridge. The traps are on a little foot-wide cement ledge with mouse + shrew droppings. We checked a little while ago + there were the coons big wet footprints.

Aug. 13, 1949 Maple Creek, Tehachas Co., Calif.

<u>Moinetta</u> :	9 Pers
100 mixed traps	1 <u>S. pacificus</u> (?)

<u>Ine</u> :	8 Pers.
65 snaps	3. <u>Sorex pacificus</u> (?)
	1 <u>Zapus</u>
	1 <u>Microtus oregoni</u> (?)

After much ~~debate~~ about the microtine we have decided it is probably an M. oregoni. It was a pregnant ♀, but the feature that bothered us was that it had 6 plantar tubercles instead of the expected 5 - the sixth was quite small but definite - as in some of the M. californicus.

One thing we are impressed with among the Sorex pacificus is that of all the ♀♀ we have caught, none have been pregnant, but practically all have lots of mammary tissue.

Moinetta has caught 2 Peromyscus in her snap traps during the day time.

About noon (in the morning we skinned) we set the other 50+ live traps out upstream, stopping for a swim + sunbath on the way back.

to camp. We plan to stay here tonight again, especially hoping for more Zapus + M. oregoni.

Aug. 14, 1949 12 mi S. Korbel, on Ingle Creek, Humboldt Co., Calif.

snares	6 Pers	1 <u>Zapus</u>
65±	1 <u>S. pacificus</u>	1 <u>S. pacificus</u>
	1 <u>S. townsendi</u>	
	2 <u>Zapus</u>	

live traps	14 Pers.
50±	1 <u>S. pacificus</u>

Get several more Zapus - all males - but no more oregoni. Skinned in a.m., left Ingle Creek about noon. Spent a lot of time trying to locate another camping place, + after numerous unsuccessful turns we turned off of 101 S. of Eureka on the road to Falk. This road ends at what used to be an active saw mill but it has not been operating since 1937 and the road is dotted with lovely abandoned bat houses. We searched several without success. Set out only our snap traps along the creek by the saw mill. Heard horned owl, saw a squirrel in a tree (strikingly orange on belly - could it have been a flying squirrel?) and heard wood rats at night. No bats seen until in the morning, when 3 were seen flying while it was already quite light out.

Aug. 15, 1949 Elk River, Falk, Humboldt Co., Calif.

about 5 snares each:	5 Pers
2 <u>S. pacificus</u>	2 <u>S. pacificus</u>
Me: 2 <u>Zapus</u>	1 <u>S. hendersoni</u>
10 Pers	1 <u>S. townsendi</u>
2 stolen traps	1 <u>Microtus calif.</u>

RK. Pearson
1949 - 50

6

Marietta's S. hendirii was in much the same sort of set as mine - near rocks on the edge of the creek.

Home about 8:15 PM.

Dec. 6, 1949 5 mi N. Novato, San Antonio Creek, Marin Co., Calif.

Left Berkeley yesterday at 1 PM. with Marietta Vogt + Mary Kopford. Set out a total of 362 traps, alternating live + snap traps in Mary's + my line so that we could compare the catch. Mary caught an equal number of animals in the snap + live traps (4 in each), but I got 11 in snaps and only 6 in the live traps. Our total catch was 32 animals:

4 Sorex

8 Mus

13 Reithro (3-4 r. virulentus)
 (9-10 megalotis)

7 Microtus

We have decided it is easier + faster to use line traps in Salicornia since you don't have to clear so much area for them. Apparently the catch is fairly similar ^(live vs snap) 1. of the 4 shrews taken, 2 were in snaps + 2 in line traps. The line traps are also easier + faster to pick up. Full moon, fairly clear, considerable dew.

April 15, 1950. 3/4 mi E junct N + Middle Fork American River, Eldorado Co., Calif. Left Berkeley 8:30 AM with Marietta Vogt, Mary Kopford, + 4 boats. Arrived at Auburn near 11 o'clock + found a camp site on

1950

the South fork of the America River. It is on posted land owned by the Portland Cement Co. but we got permission to stay from the two men who are working here now at demolishing the old buildings. They showed us some cracks in the building where bats were roosting and we extracted 3 Myotis yumanensis. There were also Tadarida in the cracks. Set out 42 traps - some along a little stream on the north-sloping hill by camp and some in more open country under isolated bushes and in holes along the road. We set one steel trap in a culvert.

April 16, 1950 My 42 traps produced 11 Peromyscus truei and one hermit thrush. Also caught a wood rat in the culvert. We skinned in the morning (Mary had a Microtus but other than that there were only more Peromyscus truei). Set out another line along the river, many in moss-covered rocks on the hillside lining the river. 50± traps. After lunch we drove around to the hill on the other side of the river, where Mainella & Mary set out some traps in the low chaparral that covers that slope. Subsequently looked for bats in the hollow cement supports at the ends of an obsolete railroad bridge. Found one room with many droppings, likely a night-roosting place. More skinning after supper - one Peromyscus maniculatus which was caught in the wood pile at the head of our sleeping bags, and otherwise just more Peromyscus (truei?). Checked on night

Pearson
1950

8

roosting places, (see Mary's notes) and picked up one yumaensis in the bridge he found this afternoon.

Also one yuma in house near crusher. None in tunnels.

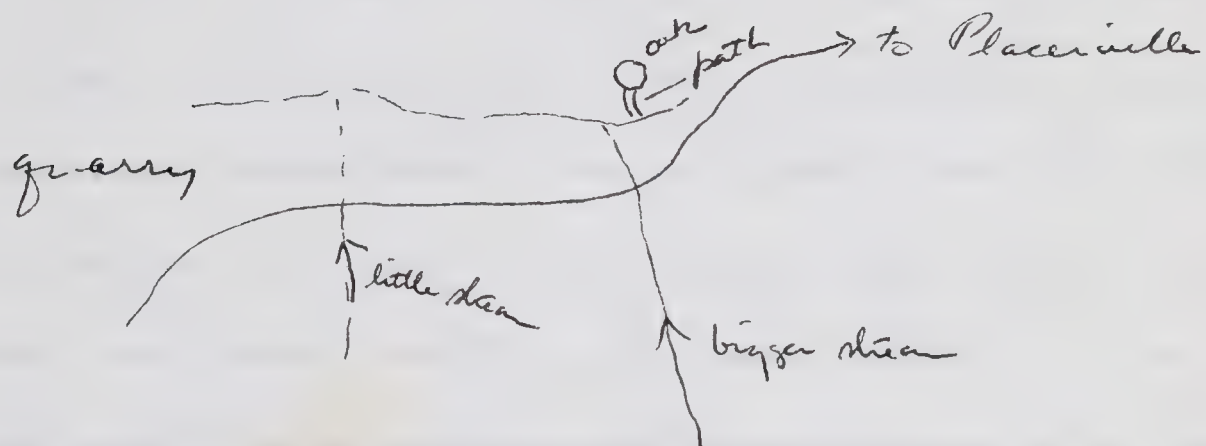
April 17, 1950 Mary's + Manilla's traps had only none of the same species Peromyscus, in spite of the difference in habitat. My line along the river held 15 Per. (all Truei?). In the morning he drove east on the Forest Hill Rd. looking for bats. Found one good Tunnel - an old mine (see Mary's notes). In the afternoon Manilla + Carol + I went to Auburn to ask about bats and get some supplies. Left our names with the Biology professor at Placer College and found one high school boy who claimed he saw a few bats near a small cave a few miles north of Auburn on route 40. At dusk we went up to the crusher to watch the bats come out, with Mary's 410 + my slingshot. Saw many flying, the noisiest being Eptesicus that were night-roosting in a fairly big crack in the crusher. After no success at shooting one outside we shot into the crack and got both Eptesicus and Tadarida. Now skinning upon our return to camp.

April 18, 1950 Made a lost trip to the crusher and extracted a few more yumaensis and 2 Tadarida which Mary banded and released. Then we went up the road towards Placerville to look for a limestone cave we heard about yesterday. The cave opens at the base of a big oak tree

K Pearson
1950

9

about $\frac{1}{2}$ mi past the big quarry operated by the Pacific Portland Cement Co. From the quarry on the road is roughly like this:



The cave consisted of two fairly large chambers with lots of nooks & crannies suitable for bats although the chambers themselves were somewhat light. No bats.

Then came a wild goose chase looking for the small cave N on route 40. We finally found the mentioned cave, which was small & had few droppings in it, but wasn't suitable for bats — quite late. Lunched & home by 5:30

May 4, 1950 Left at noon with OP for Petaluma marshes. Set out a few live traps there near the hunt club (38 for me, 50 for OP) and drove over to Guerneville. Arrived at Golden's barn about 4 o'clock and found the bats mainly in two rather diffuse clusters near the ridgepole in the attic. We hung up nets & plugged all the holes we could find and think that only one Corynorhinus escaped us. We netted 73, all females, & mostly pregnant. We

W. K. Pearson
1950

10

picked out 10 to operate on, and in 6 of these we measured the bump in the uterus and sewed them up and released them. The other 4 we kept - 2 were not pregnant, 1 was resorbing, & the last had a broken wing. Drove back to Petaluma for dinner & checked our traps - one Soxet & a mus in mine. In the morning my traps held 3 more Soxet and 3 more mus. No Microtus in either OP's or my line! Home by 10 AM.

June 1, 1950 Manhattan Mines, Sapa Co., Calif

Left Berkeley with Bernie Riney about 8:30 this evening and arrived at Knoxville about 11 PM. Along the way we saw lots of night life - one Dipodomys scampered across the road in front of us, 2 mice, lots of deer, several rabbits, plus cats, etc. In the Knoxville tunnel was one night-roosting Corynorhinus - banded. We killed him immediately & putted his stomach contents in alcohol.

June 2, 1950 In the morning we started searching all the Manhattan tunnels for the large nursery colony here a few weeks ago. In the Abyss cave where the colony had been were one awake ♂ Cory, one torpid ♀. Big pile of gnaws on floor of the cave, but no further bats seen. In another cave near the 26-house hill we picked up another single torpid female Cory. Nothing in OP tunnel, one awake ♂ Cory in Mary's tunnel on the eastern hill of Manhattan Mines, and another torpid ♂ in Catacombs tunnel. None in Mangainta hill or any of the other tunnels. We looked in

1950

every tunnel we knew of in the area but found no more bats. About 11 AM we drove up to the Reid mine where there was one awake Cory that we didn't collect. Then on to Acton Springs. About 3 we loaded in the kitchen attic & saw 2 Cory, both awake. We didn't get either of them. Colony found in rear of upper tunnel. We weighed, banded, etc, 19 babies. There were 4-5 pregnant ♀♀. And 4± females who were neither lactating or pregnant. When we finished the banding we had only 2 babies extra, & had released 3 lactating females, so perhaps we missed a baby somewhere in the tunnel. Most of the babies we fastened onto the mother before we released them but the 2 extra plus one other baby who wouldn't hold on properly we put up on the wall & watched. It wasn't long before the mothers came & got them. First they would circle around, finally land and make a clicking sound while nuzzling the baby. The baby who wouldn't hold on was covered by her mother & nuzzled, but when the mother took off the baby still hung to the wall. The mother wheeled right around and landed on top of the baby again and the next take-off the baby hung properly. One apparently full-term baby was really a new-born. It was born in the cage and when we were handling the mother she still had not completely expelled the placenta. The baby was

dry, healthy looking, and hanging tightly to the nipple.
One bat + baby flew past us out the mouth of the cave.
Temp. in the cave 62° about 20 yds back from entrance.

Total 48 bats in upper tunnel: 19 babies
50 lact
5 preg
3 non-breeding
1 torpid non-breeder.

June 5, 1950 1.3 mi S. Inverness, Marin Co., Calif.

Left about 8:30 with Todd Smith & Dr. Koford.
Arrived at Golden's about 10:30 + collected the bats quite efficiently. Only about 3 escaped from the side tunnel on the west side of the attic. Of our six bats operated on May 4, 1950:

#	Age	Size	Wing	Cond. June 5
49-123618	> 3 yrs.	10 mm.	not preg.	
42-138157	72	11 x 9	not present	
42-138191	2 or >	12.5	not preg.	
49-123161	3 or >	15 mm.	with baby 49-123011 (27 mm; 4.4g)	
49-123163	2 or >	17.5	dead in downer window fur still matted around incision	

Kept - 42-138189 2 16.5 not preg.

Collected a total of 121 bats: 54 babies
55 lact
6 non-breeders
3 aprog. non-breeders
3 preg.

Over half the babies stayed with their mothers during the banding process. Of those that

Pearson
1950

13

had become separated in the cage, we put them all together in one cage hoping they would match up but none did. Castrated 3 young males (about 1 gram weight). One young castrate flew - perhaps his first flight - he was 39 mm forearm, wt. 7.5 g. We also took notes on when eyes are open + when ears are up. Again noticed that the older young can make adult noises (about 6 grams). Another thing we noticed was the special attention mothers gave to the baby bats that had fluttered to the ground. One anxious mother who had landed on our cage holding the baby bats, repeatedly flew down to a young who was making its way across the floor. It apparently was not hers - the baby paid no interest in her, and after she sniffed at him she didn't seem to try to pick it up. May took the babies up to the attic + noticed more of the same behavior - when a baby would flutter to the floor the mother seemed to come after it rapidly. Temp. 52° in attic.

Looked for the Bolivian colony. Found the tunnel, which seemed fairly cold, but no bats. Home 8 PM.

One of the Inverness bats was just beginning to parturate when we spotted her + put her in a separate cage for observation. She kept her

Pearson
1950

14

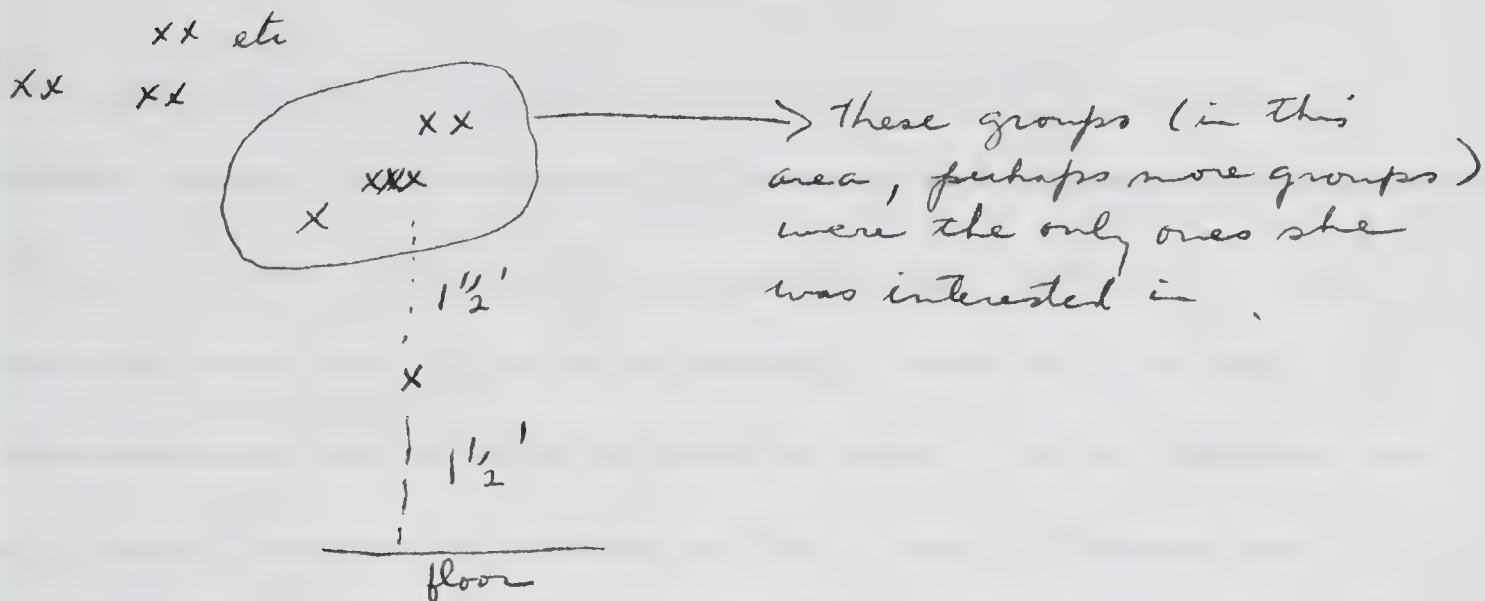
tail well curved around her so that we couldn't see very well what was happening, but $\frac{1}{3}$ hr later the baby was out and hanging onto her nipple, the placenta was just being expelled.

June 8, 1950 Aetna Mines, Napa Co., Calif.

Left Berkeley about noon with Mary Kopford & children, Bernice Riney, & Carol & Peter. Looked in the kitchen attic and there were three awake Cory there — one banded on the right wing, one unbanded, & a third. Located the colony still in the upper tunnel, this time much closer to the entrance than on our last trip. Took the rest of the afternoon off for a swim in Pope Creek & a leisurely supper on the gravel beach. About 11 o'clock Bernice & I went back to the upper tunnel and netted the whole cluster of bats, hanging about 20 yards in, where it was this afternoon. None escaped, and there were no other bats in the tunnel at the time. Temp. was 62° , as previously. There were 5 adults in the cluster of 28 bats. Of the 19 babies we had banded a week ago, 5 had left, but there were 9 new babies (last week there were only 5 pregnant females). Our prize baby who was born while we were banding last week was there again. Castrated one male — 49-123718.

We were weighing + measuring at the tunnel mouth, turning the babies loose on the wall as we finished. The babies were somewhat scattered over the wall - some small groups, some singly. An occasional adult would flutter in and out again at the entrance, making short rapid squeaks as she flew. One mother who either had flown past us into the tunnel or was one of the 5 adults who had become separated from her baby made repeated visits to the wall in front of us. Many of the baby bats were squeaking, and she seemed to have difficulty finding her own. She would first alight near one group and then near another, then a third time she landed on a single baby. Each time she stayed on the wall quite briefly after searching in the particular group at hand. I had the impression that she wasn't finding her baby in those groups, although she never seemed interested in the several groups of babies to one side of the area where she kept landing. There was one baby squeaking about $1\frac{1}{2}'$ up from the floor but fairly near (about $1\frac{1}{2}'$ down) from the groups she was working over. I moved him up to the other groups, and the next time she lit she covered him and promptly flew off with him.

The pattern on the wall was roughly:



Sept 17, 1950 - Aetna Springs, Inyo Co., Calif.

Left yesterday noon for Aetna + Manhattan
Cory colonies. Stopped at Angwin + found one
adult ♂ upstairs in the innery. Next stopped at
the kitchen attic where we found much
activity. All the bats seemed to be awake,
fluttering about at the dark end of the attic.
Managed to catch about 10 of them, but know
that 3-4 escaped. Most were young females,
although one was a banded young male, ~~and~~
and there were several adult females there
too. We heard great squeaking around the entrance
to the attic & by climbing under the ventilator
motor could see swarms of Antrozous & Tadarida
crawling in the space between the roof + the
ceiling of the room below. They must get in behind
the chimney and crawl up to the roof.

At Aetna Mines we missed a Cory in the
lower left tunnel (probably flew into that super chamber
that's so hard to get into) and got one ♂ awake
Cory in the lower right.

Pearson
1950

17

In the upper tunnel was an awake ♀ in the back half of the tunnel. One more ♂ in the "danger keep out" tunnel. No bats in the big pit up the road, one ♂ Cory awake in the red dirt tunnel. Payrie & I went up to the Aetna

Abyss tunnel & looked through it thoroughly for the first time. No bats, but it seems like a good tunnel. Several pools of very clear water in it, in old vertical shafts. Supper & slept at Poke Creek where we saw *Pipistrellus* flying. Got rained on during the night, & had real lightning & thunder.

In the AM drove up to Manhattan Mines & started through all the tunnels. No bats in Catacombs or OP tunnels. Found one ♂ in Lucerne-like tunnel, several ♀♀ and a young ♂ in Mangainta tunnel (2 escaped), one ♂ in Upper Mangainta (one banded ♀ escaped), 2 Corys escaped in the Abyss Tunnel, 1 escaped in small tunnel east of 20-house hole. The 2 that we missed in the Abyss Tunnel were flying when we first saw them, & flew into a little cubby hole quite close to the top. We couldn't follow them there. In the Mangainta Tunnel there was one torpid ♀ & one torpid young ♂. All the other bats we saw at Manhattan were awake! It was an overcast, fairly cool day. At Knoxville we missed another quite awake Cory. Drove home by 4PM. Kept all the bats for different purposes.

December 16, 1950 Clear Lake, Lake Co., Calif.

Left about noon with brats. Arrived at Sulphur Bank house about 3 PM + found there one Coy on a rafter in basement room. I marked the spot where she hung and left her undisturbed. Proceeded to the tunnels at Lucerne. Both empty. The south tunnel has recently had either a fire or an explosion in it. There is fine black dust on ceilings + walls of the entire right branch of that tunnel. A terrible smell - South tunnel was drippy back in the right fork as well as near the entrance where the floor had sizeable puddles. The north tunnel was mainly drippy near the cave in part way back.

Checked tunnels at 9 PM - no bats.

AM temp outside = 45° ; in north tunnel it was 52° about 15 feet in from mouth. We went back to the Sulphur Bank house and found our female unmoved since yesterday. Temperature near this bat was 49° .

Came home through Aetna Spring + picked up one banded ♀ (goaty vagina) for some sperm survival experiments.

Dec. 20-21, 1950 Manhattan Mines, 2000 ft., Inyo Co., Calif.

Left at about noon with Bledel + Payne, heading first for Aetna Spring. Litcher at 50°

1950

and had in it one banded ♀, which we left there (C161773). Looked in all the Actua mine tunnels but no bats. Upper tunnel was 60° as it is in summer.

After dark we drove to the Manhattan mines. Saw a Dipodomys (?), deer, + jack rabbits on the road. Nothing in the Knoxville tunnel at about 7 PM. After supper we looked in a few tunnels - Mangaita (2 toypid ♀♀), So-house hole (one came had 2 flying bats that escaped, another had 2 ♀, 1 ♂) and kept all the bats in the car until morning. The temp. got down to 44°F during the night. Clear, full moon.

A survey of all tunnels in the morning brought in only 8 ♂♂ + 8 ♀♀. Distributed as follows:

	Banded		Unbanded		Kept
	♂	♀	♂	♀	
OP Tunnel 50°	2 large	2 ? m.	2 large	0	2 ♀
Citacomb. 49°	0	2 2 med. m.	4 1 ^l med. 2 small 1 med.	3 med.	2 ♂; 5 ♀

Most of the ♀♀ were gooey. In the cones we had searched + cleared out the previous night we found:

	PM	AM	Kept
Mangaita	1 small m ♀ 1 tiny m ♀	1 tiny m ♀	1 ♀
So-house hole	2 young ♀ 1 young ♂	1 adult ♂ 1 young ♂	2 ♂
	4 ♀; 1 ♂	2 ♂; 1 ♀	

1950

We killed the two males who were known to have moved into 20-house hole but found their stomachs + intestines empty.

One Myotis thysanodes was found torpid, partially emerged from a crack in OP tunnel.

New bands put on:

49-123731	♂ large epi
2	♂ " "
3	♀ not goosy, ting ~
4	♀ goosy, ting ~
5	♀ goosy, ting ~
6	♂ small epi

Old bands read:

♀ 49-123582	n med. goosy.	Kept
♀ 569	n med. goosy.	Kept
♂ 359	large epi	
♀ 49-123333	goosy	Kept
♂ 123366	- large epi	
♀ 41-234652	n med. goosy.	Kept

some of the bats

When we released ~~the~~ by the corral we were surprised to see how low in among the chaparral they flew. One was seen to hang up in the chaparral, at least temporarily.

Jan 20, 1951

Subway Cave, Shasta Co., Calif.

Left about noon with Payne, driving all afternoon under an overcast sky to arrive at Subway Cave about dark. There was about a foot of snow on the ground. A 10 PM check through the cave found no bats flying, and only scattered individuals through most

of the south branch. The few clusters we found were to the west side of the largest chamber. In the morning the bats were in the same places as far as we could tell. In all, collected 18 males & 4 females. The females were mostly scattered about in the passages, while the majority of the males were clustered in the warmer section of the largest room. Two of the females were unbanded, one young. About 2 unbanded adult ♂♂.

In Parrish Cave at noon we collected the bats with the help of Brent Parrish & a friend of his. They hung scattered over the ceiling in the largest part of the passage, and many were quite difficult to reach. It took us a long time to collect the bats, so many of them were awake before we were through banding. In all there were 81 ♂♂, 30 ♀♀. There were very few young bats among the unbanded - about 2 young of each sex.

Both in Subway & in Parrish we found one male bat in very bad condition. The one in Subway we put on a ledge; we kept the one in Parrish. He weighed 8.8 gms, although we both had the impression he felt very light.

About 10 Eptesicus were in the cracks near the crossroads in the south tunnel. We

K Pearson
1951

22

extracted 2 males to bring home with us.

March 9, 1951 Shasta Lake, Shasta Co., Calif.

Left about 4 AM with Joe Gorman, Bill Hoodin + Bob Bailey. Arrived at Redding about 9 AM + proceeded to look up a Mr Palmer, referred to us by Dr Welles of Palos. With Mr Palmer we drove out 299 to the dirt road leading in to the Squaw Creek camp that Joe was interested in for his salamanders. We only were able to drive in one or 2 miles before we ran into a snow storm and impassable roads. Mr. Palmer suggested that we could get to all the area that interested us by boating across Shasta reservoir + offered to lend us his boat and outboard motor. With much herring + hawing and waiting around for Palmer's son Bruce who was to accompany us, we finally got started about 4 PM. The motor was not altogether reliable, however, so the trip across the lake took over an hour. We landed on a small creek flowing into the McCloud branch of the reservoir, and thence started our climb up to Potter cave with provisions + sleeping bags. Potter is a limestone cave with a large opening and lots of flat camping space within the mouth of the cave. As we reached the cave the sun had

1951

already set and we saw a few bats flying around the entrance to the cave. They apparently had been roosting in cracks over the large mouth of the cave. Several flew into the cave, so we promptly followed them in. The cave shortly became quite warm & wet, & before going very far we came to a large drop which we couldn't negotiate. We could see a bat flying in the high-ceilinged passageway but had no good chance to catch it.

March 10, 1951 In AM we set out by boat for Baird cave, taking our lunch with us. The night temperature went down to freezing, and icicles formed beneath some of the drips near the cave mouth. About halfway up the steep hill to Baird cave Joe turned over a big rock & got his first *Hydrobatidae*. Found 2 more before we got to Baird. The cave has a $15\frac{1}{2} \times 6$ ft opening and then opens downward at an angle for 100 ft, when you come to a ladder & descend into a very large chamber with giant stalagmites covering one side of the room. We found numerous bat droppings — some scattered over the floor and others piled up in small areas in side chambers. Stoneman Cave, a short distance across a gully east of Baird was visited by Bill & Bruce who claimed it looked good for bats but they found none in it. On the descent from Baird Joe turned up another

1951

Hydranotes. Proceeded to the beach where our boat was and to our surprise saw 2 bats flying, 3:30 on a sunny afternoon. One of the bats flew at me several times & I ran for the net & gun we had brought. The bat then flew within 2 yards of me and landed on a rock on the beach. A Myotis.

March 11, 1951 Another night at Potter, & in the evening we had several unsuccessful shots at bats apparently trying to enter the cave. I had about 50 musen specials out along the stream below and up the mountain to the cave. 8 Peromyscus - 2 boylii, 2 maniculatus, and the rest truei. We managed to get the boat started for the other side of the lake about 9, but were forced to row all the way across. It was past noon by the time we had the boat out of the water & taken Bruce home again. About 2 PM we set out for Larrea, arrived at Subway at 6 PM. There were 2 clusters of 2 males & the other bats hung singly, well scattered through the south branch (none in north). Again one ♂ was found dead (#42-112390). Altogether there were 12 bats, 2 of which were ♀♀. Kept the dead one + 4 males. Neither ♀ was goey. No unbanded bats. Joe took a temperature of a bats mouth with his fast-recording thermometer = 0.9 °C. The air where the bat was hanging

K Pearson
1951.

25

was 1.2°C , but throughout the cave varied from 0.9° to 1.0°C . Icicles hanging from the ceiling in the south branch. Back to Berkeley about 1:30 AM.

April 21, 1951

Southern California

Left Berkeley about 9 AM with Dorothy Pitelka & the 4 children. Spent the night a little up the Carmel valley under a full moon. Next morning we picked up Lois Taylor at Añiloman & went to the first house on the left on the road going up the Carmel Valley. It is the old Hutton ranch. The caretaker accompanied us to the attic where a couple of Myotis thysanodes flew out of cracks about the eaves. We caught one - a late pregnant ♀ with a single fetus.

Next stop Malpass creek. 9 ♀♀ Corynorhinus in cluster at ridgepole, asleep & easily captured. Two quite torpid ♀♀ hung together in the side attic. All the females appeared to be well along in pregnancy. 9 were banded; 2 unbanded.

April 26, 1951

Arrived at Borrego Springs and set out a line of about 20 traps. The desert looked very dry, little green on any of the plants. Two Perognathus eremicus in the traps in a.m. The next night we spent on the Mojave desert, just north of Mojave. I put out only 12 traps, in a circle about 25 yards from the center of our camp. April 28 we found,

1951

26

1 Neotomys, 2 Dipodomys, 2 Peromyscus, and
1 Onychomys, and also 2 sprung & empty traps.
Drove home the 28th.

June 2, 1951 Malpaso Creek, Monterey Co., Calif.

Left early this a.m. to pick up frozen
sea otter that washed up on Point Lobos.
Watched sea lions for an hour or so at lunch,
but could see no new pups.

In mid-afternoon we visited the Malpaso
Creek bat house. One cluster of Corynorhinus
at the ridgepole, and a single bat hung in the
side attic. One and perhaps more escaped.
One adult ♂ was in the catch. 9 lactating,
banded ♀♀, and one female observed to be
on April 22, was not lactating. One new
♀ (not lactating) was also present. The 10
young bats ranged from 3-23 days old. 7♂♂; 3 ♀♀.
One of the lactating ♀ was a 1-year-old. All
the young 35mm forearm (17 days old) and larger
could fly. One young 34mm (16 days) "almost flew":

June 7, 1951 1.3 mi S Inverness, Marin Co., Calif.

Arrived at Golder's Barn about 3:30 PM, and
as soon as we entered we could hear the bats.
We think we caught them all. All told there
were 56 ♀♀ adults, 42 young, and only 2 unbanded
♀ among the 56.

Age breakdown of 54 banded bats:

1 yr old	5	of 22 present in 1956	2m. preg 1 preg 2m. yg.
2	5	"	"
3	6	"	"
4	3	"	"
>4	19	"	"
Misc.	16	"	"

Juveniles: 19 ♀♀ and 23 ♂♂

The babies varied from new-born to 38mm forearm. Surprisingly, after seeing those with forearm 35mm fly at Malpass, this largest baby was unable to fly. 8 adults still prey. 7 of the 56 were non-breeders. One ♀, non-breeder, over 4 years old, had a funny white mottling on her wing membrane.

We observed that the babies hang onto their mothers mostly through the nipple, as many flew with their babies clinging only in this way. When a bat-mother + baby were hanging from a walking along a beam we could see that the baby (a very young one) was hanging to its mother's nipple but its feet were on the beam and it seemed to be walking along with its mother.

One lone Tadarida under the board on the stairs.

June 15, 1957

Altna Springs, Napa Co., Calif.

Left Berkeley about 9:30 AM with OP, Carol + Peter.

Arrived at St. Helena near noon and found

1951

our Corynorhinus in the Old Bale Mill.

Between 5 and 10 escaped. 7 were banded in 1949. We banded 11 new adults, 3 young ♀♀ and 5 young ♂♂. One ♀ was still preg., but the young ranged only from 35-43, so there were no very young bats present in the catch. Six of the 18 adults were not lactating or pregnant! The caretaker told us the barn was sprayed about 5-6 weeks earlier against termites, and this may account for the high reproductive failure. Caretaker says the bats were there in large numbers at the time of the spraying. Two unbanded mummies found on floor.

At Aetna Springs the attic had no Corynorhinus, but Antrozous with young were along the wall near the chimney, and Tadarida & Myotis (including immature Myotis) were behind the chimney.

We found the Cory colony in the upper tunnel at Aetna Mines, & we believe we caught them all, although one escaped without seeing her band. There were: 22 adults, 20 young.

of the adults: 1 was 1 yr old (of ♀ possible)
3 were 2 yr old (of 5 here in 1950)
18 were 3 yr old & older.

The 2 non-breeders were in the 3 yr & older group. We have taken so many ^{young} from this colony that the percentage returns for these groups are meaningless. Two ♀♀ of the 18 oldest group were

not here in 1950.

1949	1950	1951
47 banded	27 returned	18 returned
Kept 9	but 2 more in 1951	= 86% of
38 left	so 76% survived	possible from 1950
	Kept 8	

Had a swim in Pope Creek + drove on to Manhattan Mine. A smoldering but not very extensive brush fire at the mine made us camp up the road a little way.

June 16, 1951

Drove into the 20-house hole, saw a few flying Corynorhinus + finally located a cluster of ♀♀ and young in a short network of tunnels up to the left of the Abyss tunnels. We caught what we could, but ca 20? escaped. These bats seemed in general not to be in good shape. Many had parasites, and several had bare areas of skin on their bodies. Only 11 were ones banded last year, and 5 of these were non-breeders. The young were in general too old to age; no freq ♀ were caught. 25 new adult ♀♀ were banded (3 non-breeders) 21 young ♂♂ and 21 young ♀♀.

Totals caught: 36 ad. (8 non-breeders)
42 yg.

We released the mostly volant young as we banded them at the mouth of the railroad tunnel into

the 20-house hole. We were interested to see how tangled some of the young became in the cobwebs they ran into on the walls + ceiling. Probably a good reason why Cory avoids attics with many cobwebs, particularly for use as a nursery colony.

June 18, 1951 Inverness, Marin Co., Calif.

Left Berkeley at 4:30 PM. with children, OP, Jack Trench + Janet Anderson. First bat stop at an old brown-shingle house .5 miles on the road SE Inverness Park. The attic was full of Eptesicus with young, Tadarida, and perhaps some Myotis, although none of these last were taken. Much guano in attic. We banded 9 ♂♂ Tadarida, and 29 adult Eptesicus (about 20). Some of the ♀ Eptesicus were pregnant, most were lactating. The smallest young Eptesicus was a ♂, forearm 18 mm. We banded 11 young ♂♂; 12 ♀♀. Kept about 8. Released rest on porch of house across street.

Went on to Froody Hill's house in Inverness. A large colony of bats between the roofing and the ceiling, ^{to} the rooms. Jack + Janet netted some as the bats emerged a little later, and caught 2 Myotis californicus, lactating.

Little activity at Golden's. about 10 PM. One Myotis yumanensis in the middle room downstairs,

none under the board on the stairs. Cory. were flying about in the attic, but most of these were probably young. 4 unbanded young were found & banded. One adult bat was caught in the cluster with the young.

August 10, 1951 Pit River, 1000 ft, 5.5 mi NW Round Mountain, Shasta Co., Calif.

Left early a.m. with Ln. Voge & children - arriving at Redding about noon. We took the road in to Squaw Creek but stopped when we reached the bridge over the Pit River. Found a fairly good campsite along the river's edge, within easy distance of a large grassy meadow (dry), forest of yellow pine, douglas ^{altogether} fir, & some hardwoods. Put out about 52 traps which brought in one Sorex aprice & one Peromyscus truei aprice.

Aug. 11, 1951 After skinning the shrews we left for Hat Creek area. The Pit River had fallen over 2 feet from the time we arrived yesterday afternoon. Many fish jumping, & saw a few bats flying.

Our first night on Hat Creek was spent a little south of Big Springs Campground. Put out 26⁺ traps aprice, caught 3 chipmunks each. Minnetta also caught 3 Peromyscus maniculatus.

Aug. 12, 1951 2 mi SW Old Station, 4600 ft, Shasta Co., Calif.
Put up several of the chipmunks, taking home

with us two which were caught in live traps. For trapping purposes we decided to try another area closer to Flat Creek ranger station. Took a dirt road toward the creek which led to an abandoned ranch and a fairly nice campsite along the stream. The trapping area was varied - fencerows, old stream bottom with moist grassy places and dead willows, dry open grass and rock exposures. I caught nothing in my live, & Inarietta caught 1 Pero maniculatus. We saw many bats flying over the stream in the evening - seemed to be feeding on the insects which were very numerous about 2 inches above the surface.

Aug. 13, 1951

Drove home through Manton. Reached Berkeley about 4 PM.

Pearson, A.K.

1951-52

Catalogue

*670-864

Peru

Nov. 28, 1951

Huaychula, Concepción, 10,100 ft., Dept. of Junin, Peru.

670 large grey hind. + ^{yellow} testes 2 mm. ♂

Dec. 3, 1951

10 km. S. Chala, sea level, Dept. of Arequipa, Peru

671 lizard - shot on beach at noon.

672 lizard

673 lizard

Dec. 6, 1951

12 km. SSW Arequipa, 8500 ft., Dept. of Arequipa, Peru

674 Phyllotis darwini rupestris 221 x 117 x 24 x 25 ♂
caught overnite in cactus - low thorn brush desert hills. Testis 9 mm

675 Phyllotis darwini rupestris 217 x 115 x 25 x 25 ♂
Testis 10 mm

Dec. 8, 1951

Rio Torata, 11,200 ft., 15 km. NE Torata, Dept. of Moquegua, Peru.

676 Bolomys berlepschii Testis 8 mm. 161 x 65 x 20 x 14 ♂

677 Phyllotis darwini rupestris Testis 10 mm 207 x 110 x 24 x 24 ♂

678 Phyllotis darwini rupestris Testis 7.5 mm 196 x 105 x 22 x 23 ♂

679 ♀ toad - caught in snap trap in rock wall

680 tocono - ^{many} ~~intracaudal~~ follic. up to 1.5 mm. ♀
4 emb., 21 mm CR; 2 at, 2 left.

681 Bolomys berlepschii 158 x 61 x 21 x 12 ♀

682 Phyllotis magister magister Testis 8.5 mm 267 x 145 x 29 x 25 ♂

683 Phyllotis magister magister Testis 8.5 mm 215 x 117 x 24 x 25 ♂

684 Phyllotis magister magister ^{internus stent}, no emb. 235 x 127 x 27 x 24 ♀

Dec 10, 1951

5 km NE Tala, 13,700 ft., Dept. of Moquegua

685 Phyllotis darwini chilensis ^{no placental scars} not preg 210 x 114 x 26 x 22 ♀

686 Phyllotis darwini chilensis ^{no placental scars} not preg 169 x 84 x 25 x 22 ♀

Dec. 12, 1951

Lago Viscacha, 14,900 ft., Dept. of Inogwegna, Peru.

- 687 *Chroeomys* ^{jelskii} preg. 2 left; 1 rt. Bump 5x4
bone many times 185 x 88 x 27 x 19 ♀
- 688 *Chroeomys* ^{jelskii} 6 mm testis 176 x 76 x 25 x 18 ♂
- 689 *Phyllotis* ^{darwinii chilensis} 12 mm testis 231 x 122 x 27 x 29 ♂

Dec. 15, 1951

Rio Santa Rosa, 14,400 ft., Dept. of Puno, Peru.

- 690 *Chroeomys* ^{jelskii} lact.; no embos 163 x 69 x 24 x 18 ♀
- 691 *Phyllotis* ^{darwinii chilensis} testis 10 mm 225 x 114 x 25 x 25 ♂

Dec. 16, 1951

Rio Santa Rosa, 13,300 ft., Dept. of Puno, Peru

- 692 *Bolomys* ^{berlepschii} testis 10 mm 171 x 77 x 21 x 15 ♂
- 693 *Phyllotis* ^{sublimis} (2) 133 x 47 x 20 x 20 ♀
Andersonia ^{sublimis} (2)
vaginal plug in situ
uterus short, no embos.

Dec. 17, 1951

Campa Queullecota, 13,200 ft., Dept. of Puno, Peru.

- 694 *Ctenomys* ^{peruanus} 292 x 86 x 37 x 8 ♀
vagina closed, nipples 2 mm long.
Preg. 2 left, 3 rt. Bump 10 mm. Embryos
invisible. Corpora lutea 2 left, 3 rt., pink.

Dec. 21, 1951.

Lago Salinas, 14,100 ft., Dept. of Arequipa, Peru

- 695 *Heperomys* ^{lucilla} testis 3.5 mm. 94 x 35 x 17 x 14 ♂

Dec. 22, 1951

Tam. E. of Arequipa, 8800 ft., Dept. of Arequipa, Peru.

- 696 *Phyllotis* ^{darwinii rupestris} testis 9 mm 30 g. 218 x 113 x 24 x 23 ♂
- 697 *Phyllotis* ^{darwinii rupestris} testis 9.5 mm 40 g. 221 x 116 x 25 x 25 ♂
- 698 *Phyllotis* ^{darwinii rupestris} lact. no embos 42 g. 227 x 116 x 25 x 24 ♀

Dec. 23, 1951

Lago Salinas, 14,100 ft., Dept. of Arequipa, Peru.

- 699 Akodon andinus ^{no emb.} lact. 20 gr. 129 x 50 x 19 x 14 ♀
700 Akodon andinus testis 10 mm. 129 x 48 x 20 x 13 22 gr. ♂
701 Hesperomys ducilla testis 6 mm 110 x 36 x 17 x 17 18 gr. ♂
702 Hesperomys ducilla testis 5.5 mm 107 x 39 x 16 x 14 15 gr. ♂
703 Hesperomys ducilla ^{before 2 m. across} preg 2 rt; 2 left. 114 x 39 x 17 x 17 16 gr. ♀

Dec. 17, 1951

Rio Huancayo, 45 km. S. Illave, 13,200 ft.,
Dept of Puno, Peru.

704 Lizard

~~705~~

Dec. 30, 1951

~~706~~

15 km. W. of Puno, 13,000 ft., Dept. of Puno, Peru

- 705 Phyllotis ^{darwini chilensis} testis 11 mm 249 x 123 x 28 x 26 68 gr. ♂
706 Phyllotis ^{osilae hard cervix} ~~osilae~~ no embos. 224 x 117 x 24 x 20 37 gr. ♀

Dec. 31, 1951

5 km W. of Puno, 13,000 ft., Dept of Puno, Peru.

- 707 Phyllotis ^{osilae} testis 10 mm 233 x 117 x 26 x 21 69 gr. ♂
708 Phyllotis sublimis testis 9.5 mm 166 x 55 x 22 x 22 52 gr. ♂
709 Akodon boliviensis testis 10 mm 148 x 63 x 17 x 12 24 gr. ♂

Jan. 1, 1952

4 km E of Juli, 12,700 ft., Dept. of Puno, Peru.

- 710 Phyllotis ^{chilensis} ~~darwini~~ no embos. 175 x 88 x 23 x 20 23 gr.
711 Akodon boliviensis ^{in extrom. : uterus filled with fluid, cervix stout} no embos 155 x 63 x 19 x 14 26 gr.
712 Phyllotis ^{darwini chilensis} no embos; stout cervix 227 x 122 x 27 x 26 45 gr. ♀

Jan. 2, 1952

4 km. E of Juli, 12,700 ft., Dept. of Puno, Peru.

- 713 Phyllotis ^{darwini chilensis} testis 5 mm 194 x 102 x 26 x 22 31 gr. ♂

- 714 *Phyllotis osilae osilae* testis 10 mm. 261 x 139 x 26 x 28 70gr. ♂
 715 *Phyllotis osilae osilae* no embos. 222 x 117 x 25 x 21 35gr. ♀
 716 *Chrotomys jelskii* testis 7 mm 182 x 80 x 25 x 19: 42gr. ♂
 717 *Phyllotis osilae* ^{osilae} ~~flact.~~, no embos. 238 x 124 x 23 x 21: 48gr. ♀

Jan. 3, 1952

4 km. NW Pomata, ^{12,500 ft.} ~~to~~, Dept. of Puno, Peru.

- 718 *Phyllotis* ^{osilae osilae} ~~(?)~~ testis 10 mm. 273 x 147 x 27 x 23: 69gr. ♂

Jan. 4, 1952

4 km. NW Pomata, 12,500 ft., Dept. of Puno, Peru.

- 719 *Phyllotis osilae* ^{osilae} testis 9.5 mm 258 x 127 x 26 x 21 56gr. ♂
 720 *Phyllotis osilae* ^{osilae} testis 8 mm. 257 x 135 x 25 x 22 60gr. ♂
 721 *Chrotomys jelskii* testis 7 mm 176 x 74 x 25 x 17 37gr. ♂

Jan. 5, 1952

4 km. NW Pomata, 12,500 ft., Dept. of Puno, Peru

- 722 *Phyllotis osilae* ^{osilae} testis 7 mm 248 x 133 x 27 x 21 52gr. ♂

Jan. 6, 1952

15 km S. Ilave, 12,600 ft., Dept. of Puno, Peru

- 723 *Phyllotis* ^{darwini chilensis} ~~fur~~ ^{fur} ~~prince~~, no embos. 154 x 84 x 24 x 21 17gr. ♀

Jan. 12, 1952

5 km. E of Lago Encacha, 14,600 ft., Dept. of
Mogana, Peru.

- 724 *Elizmodontia* ^{puerulus hirtipes} ~~hide~~ not prime 153 x 74 x 24 x 18 21gr. ♂
 725 *Elizmodontia* ^{puerulus hirtipes} ~~hide~~ not prime 173 x 78 x 25 x 19 28gr. ♂
 726 *Akodon andersoni* testis 9 mm. 130 x 51 x 19 x 19 18gr. ♂

Jan. 13, 1952

5 km. E of Lago Encacha, 14,600 ft., Dept. of Mogana, Peru.

- 727 *Phyllotis* ^{darwini chilensis} ~~fur~~ ^{fur} ~~prince~~ no embos. 196 x 99 x 24 x 23 27gr. ♀
 728 *Akodon andersoni* testis 8 mm. 124 x 45 x 19 x 13 16gr. ♂

Jan. 14, 1952

5 km. E of Lago Sucha, 14,600 ft, Dept. of Moquegua, Peru

729 *Akodon andinum* uterus stout; no emb. 127 x 47 x 20 x 14 16 gr ♀

Jan. 17, 1952

5 km. E. of Lago Sucha, 14,600 ft, Dept. of Moquegua, Peru.

730 *Chinchilla* ^{gahanae} no emb. uterus stout. 267 x 104 x 32 x 33 121 gr. ♀

Jan. 20, 1952

4 km. E. of Lago Sucha, 14,500 ft., Dept. of Moquegua, Peru.

731 *Phyllotis boliviensis* juv. 128 x 57 x 23 x 19 16 gr ♀

Jan. 21, 1952

Lago Sucha 14,500 ft, Dept. of Moquegua, Peru.

732 *Phyllotis boliviensis* 5 emb.; 2 at 3 ft. 212 x 97 x 28 x 26 84 gr. ♀
^{large, black nipples. 15.5 mm CR. 14.5 gr food + stomach. some mammary}

733 *Chrocomys jelskii* testis 8 mm. 177 x 80 x 25 x 18 38 gr ♂

734 *Chrocomys jelskii* testis 7 mm. 180 x 80 x 25 x 19 42 gr ♂

Jan. 22, 1952

10 km. NE ^{Tarata} 9400 ft, Dept. of Moquegua, Peru.

735 *Phyllotis darwini rupertis* testis 9 mm. 212 x 115 x 23 x 23 40 gr ♂

736 *Phyllotis darwini rupertis* lact., no emb. 207 x 108 x 23 x 22 36 gr. ♀

Jan. 24, 1952

2 km. N. Tarata, 11,500 Dept. of Tacna, Peru

737 *Akodon bonapartei* ^{abys CR 8 mm} preg. 3rd; 1 ft 161 x 68 x 21 x 13 29 gr. ♀

738 *Phyllotis darwini rupertis* testis 10 mm. [205] x [102] x 23 x 24 39 gr ♂
^{caught in day, on rock house}

Jan. 24, 1952

2 km. N. Tarata 11,500 Dept. of Tacna, Peru.

739 *Phyllotis darwini rupertis* 2 emb. at horn. 17 mm 205 x 111 x 23 x 23 42 gr ♀
^{mammaries tiny CR.}

740 *Phyllotis magister magister* testis 11 mm. 263 x 130 x 28 x 25 70 gr ♂

1952

Jan 25, 1952
3 km N Tarata, 12,200 ft., Dept. of Tacna, Peru.

- 741 *Phyllotis* ^{*darwinii superstitis*} ^{bumps.} ^{early preg.} 3rt; 1 left. 202 x 107 x 23 x 23 27gr. ♀
- 742 *Akodon berlepschii* 2 embs, 21mm CR 156 x 67 x 20 x 13 29gr. ♀
- 743 hind from OP trapline ♀

Jan. 26, 1952
4 km N. Tarata, 12,800 ft., Dept. of Tacna, Peru

- 744 ~~Bat~~ *Akodon berlepschii* testis 10mm 159 x 63 x 20 x 12 25gr. ♂
- 745 *Phyllotis* ^{*darwinii chilensis*} testis 11mm. 237 x 114 x 27 x 28 70gr. ♂
- 746 *Phyllotis* ^{*darwinii chilensis*} no embs. 217 x 109 x 26 x 25 37gr. ♀

4.5 km N. Tarata, 13,200, Dept. of Tacna, Peru

- 747 *Phyllotis* ^{*darwinii chilensis*} testis 9.5mm 203 x 109 x 26 x 24 32gr.
- 748 *Phyllotis* ^{*darwinii chilensis*} testis 11mm 226 x 110 x 27 x 26 58gr. ♂

5 km. N. Tarata, 13,500 ft., Dept. of Tacna, Peru.

- 749 *Phyllotis* ^{*darwinii chilensis*} testis 8mm. 219 x 114 x 28 x 25 33gr. ♂

Jan. 27, 1952

4 km. N. Tarata, 12,800 ft., Dept. of Tacna, Peru.

- 750 *Phyllotis* ^{*magister magister*} no embs. 241 x 131 x 29 x 24 44gr. ♀
- 751 *Phyllotis* ^{*darwinii chilensis*} testis 11.5mm 247 x 119 x 27 x 26 61gr. ♂
- 752 *Phyllotis* ^{*darwinii chilensis*} no embs 230 x 118 x 26 x 26 42gr. ♀

Jan. 28, 1952

20 km. NE Tarata, 14,600 ft., Dept. of Tacna, Peru.

- 753 *Phyllotis* ^{*darwinii chilensis*} testis 12mm 204 x 92 x 25 x 25 56gr. ♂
- 754 *Phyllotis* ^{*darwinii chilensis*} 20mm CR. 223 ~~776~~ x 113 x 26 x 23 50gr. ♀
- 755 *Phyllotis* ^{*darwinii chilensis*} no embs. 213 x 107 x 25 x 26 43gr. ♀

Jan. 30, 1952

2 km. N. Nevada Livine, 15,300 ft., Dept. of Tacna, Peru

- 756 *Akodon andinum* ^{fastidius} ^{Bumps 6mm.} Preg: 2rt; 2left. 139 x 53 x 20 x 14 19gr. ♀
- 757 *Akodon andinum* testis 10mm. 133 x 51 x 20 x 14 20gr. ♂

Jan. 31, 1952

2 km. NW Nevada Livine, 15,400 ft., Dept. of Tacna, Peru

- 758 *Akodon andinum* testis 10 mm 136 x 51 x 20 x 14 22 gr ♂
759 *Phyllotis* ^{*darwini chilensis*} ~~*interus*~~ *stout*, no emb 187 x 95 x 26 x 23 31 gr ♀

February 1, 1952

~~2~~ Pampa de Ancomarca, ^{13,700 ft.} ~~12,500~~ 123 km S. Ilave, Dept.

- 760 *Akodon yelskii* testis 7 mm 168 x 72 x 25 x 18 34 gr ♂
761 *Phyllotis* (*Balanomys*) ~~*gare*~~ *estrus* (open vagina, fluidy uterus) no emb. 129 x 32 x 23 x 19 40 gr ♀

February 2, 1952

Pampa de Ancomarca, 13,700 ft., 123 km S. Ilave, Dept. of ~~Puno~~ ^{Puno}, Peru

- 762 *Phyllotis boliviensis* testis 11 mm 221 x 91 x 27 x 26 85 gr ♂
763 *Balanomys kerlebachii* testis 9 mm 153 x 69 x 22 x 13 24 gr ♂

Feb. 2, 1952

Pampa de Ancomarca, 13,800 ft., 123 km S. Ilave, Dept. of Puno, Peru

- 764 *Hesperomys* ~~*ducilla*~~ ^{*puerulus hirtipes*} no emb. v.g. slen. 117 x 41 x 18 x 17 13 gr ♀
765 *Elizmodontia* no emb; v.g. slender 157 x 70 x 24 x 18 23 gr ♀
766 *Phyllotis sublineis* 3 emb, bumps 8 mm across 152 x 48 x 19 x 21 34 gr ♀
767 *Phyllotis sublineis* 2 emb, at horn, 24 mm CR 144 x 44 x 19 x 20 40 gr ♀
~~768 *Phyllotis boliviensis*~~

Papa de Capaza, 14,300 ft., 123 km S. Ilave, Dept. of Puno, Peru

- 768 *Phyllotis boliviensis* no emb 182 x 78 x 25 x 24 40 gr ♀

Papa de Ancomarca, 14,200 ft., 123 km S. Ilave, Dept. Puno, Peru

- 769 *Phyllotis* ^{*chilensis*} *darwini* testis 11 mm 227 x 117 x 26 x 25 46 gr ♂
770 *Phyllotis darwini chilensis* testis 11 mm 241 x 114 x 27 x 26 69 gr ♂

Feb. 4, 1952

Mazocruz, 13,000 ft., Dept. of Puno, Peru.

- 771 *Elizmodontia* ^{*puerulus hirtipes*} testis 9 mm 185 x 89 x 25 x 19 33 gr ♂
772 *Phyllotis pictus* no emb. cervix stout 176 x 71 x 24 x 18 40 gr ♀
773 *Hesperomys* ^{*ducilla*} lact. pl. scars: 2R; 2L 114 x 38 x 16 x 15 20 gr ♀

774 Akodon boliviensis - testis 11mm 156 x 59 x 18 x 13 38gr. ♂

Feb. 5, 1952

Pampa de Queullecota, 13,200ft, Dept. of Puno, Peru.

775 Akodon jelskii v.g. slender. no emb. 157 x 68 x 24 x 18 29gr. ♀

776 Akodon jelskii testis 9mm 173 x 75 x 26 x 19 44gr. ♂

Feb. 6, 1952

Hacienda Paicamani, 40 km S. Ollave, 12,800ft. ↑ Dept. of Puno, Peru.

777 Phyllotis ^{chilensis} darwini testis 13mm 242 x 121 x 27 x 25 63gr. ♂

778 Phyllotis oslae oslae testis 11mm 242 x 118 x 26 x 22 66gr. ♂

Feb. 9, 1952

15 km. W. Puno, 13,000ft, Dept. of Puno, Peru.

779 Phyllotis pictus testis 9mm 188 x 79 x ²⁵26 x 19 40gr. ♂

780 Phyllotis oslae ^{spilae} darwini (?) testis 12mm 224 x 104 x 25 x 22 ⁵30gr. ♂

781 Akodon boliviensis testis 9mm 146 x 63 x 17 x 12 19gr. ♂

Feb. 25, 1952

82 km. W. Puno, 14,000ft, Dept. of Puno, Peru.

782 Neotomys ebriosus testis 8mm [161] x [53] x 24 x 18 41gr. ♂

783 Phyllotis sublinis ^{much aut. fat.} 3 emb.: 2R, 1L ^{much many trace. emb. 26mm CR} 177 x 58 x 23 x 22 73gr. ♀

Feb. 26, 1952

784 Neotomys ^{ebriosus} testis 8mm 181 x 70 x 22 x 17 44gr. ♂

Feb. 27, 1952

785 Chinchilla ^{sahamae} r. lact. ph. near ^{2R, 2L} 267 x 99 x 33 x 37 184gr. ♀

786 Phyllotis ^{chilensis} darwini testis 11.5mm 206 x 103 x 26 x 24 38gr. ♂

Feb. 28, 1952

787 Phyllotis sublinis testis 8.5 155 x 51 x 22 x 20 40gr. ♂

788 Neotomys ^{ebriosus} testis 6mm 171 x 71 x 23 x 16 32gr. ♂

Feb. 29, 1952
March 1, 1952

789 Chinchilla ^{sahamae} testis 7mm [231] x [89] x 33 x 31 97gr. ♂

1952

March 6, 1952

- 82 km. W. of Puno, 14,000 ft. Dept. of Puno, Peru
 790 Phyllotis sublimis ^{bumps 7 across} 5 embos, 3R; 2L 144 x 47 x 22 x 20 36g. ♀

March 7, 1952

- All in at home. Same morning
 791 Phyllotis pictus 4 embos. 28-CR/97 x 82 x 24 x 20 64g ♀
 792 Akodon anaeus ^{embos, 4R; 3L} 7mm across 178 x 70 x 21 x 11 40g ♀
 793 Akodon anaeus ^{testis 14mm} [145] x [47] x 21 x 12 44g. ♂

March 8, 1952

- 794 Phyllotis sublimis testis 8mm. 148 x 48 x 21 x 20 30g ♂
 795 Akodon anaeus ^{embos. 13-CR} 5 embos, 3L, 2R. 162 x 66 x 20 x 12 41g ♀
 796 Phyllotis pictus testis 10mm. 196 x 79 x 26 x 21 62g ♂

March 9, 1952

- 797 Hesperomys ducilla testis 6mm 117 x 40 x 15 x 16 13g ♂
 798 Hesperomys ducilla testis 6mm 113 x 38 x 16 x 16 19g. ♂

March 17, 1952

- 799 Hesperomys ^{ducilla} testis 7mm; sv. large 108 x 36 x 17 x 16 16g ♂
 800 Akodon boliviensis testis 11mm 158 x 65 x 20 x 14 32g ♂
 801 Akodon jelskii testis 6mm 172 x 73 x 13 x 18 29g ♂
 802 Akodon jelskii uterus short, not preg 169 x 72 x 14 x 18 27g ♀

March 20, 1952

- 803 Phyllotis sublimis ^{ambos. 10-CR. 4st; 1L} much mammary 172 x 62 x 23 x 22 57g ♀

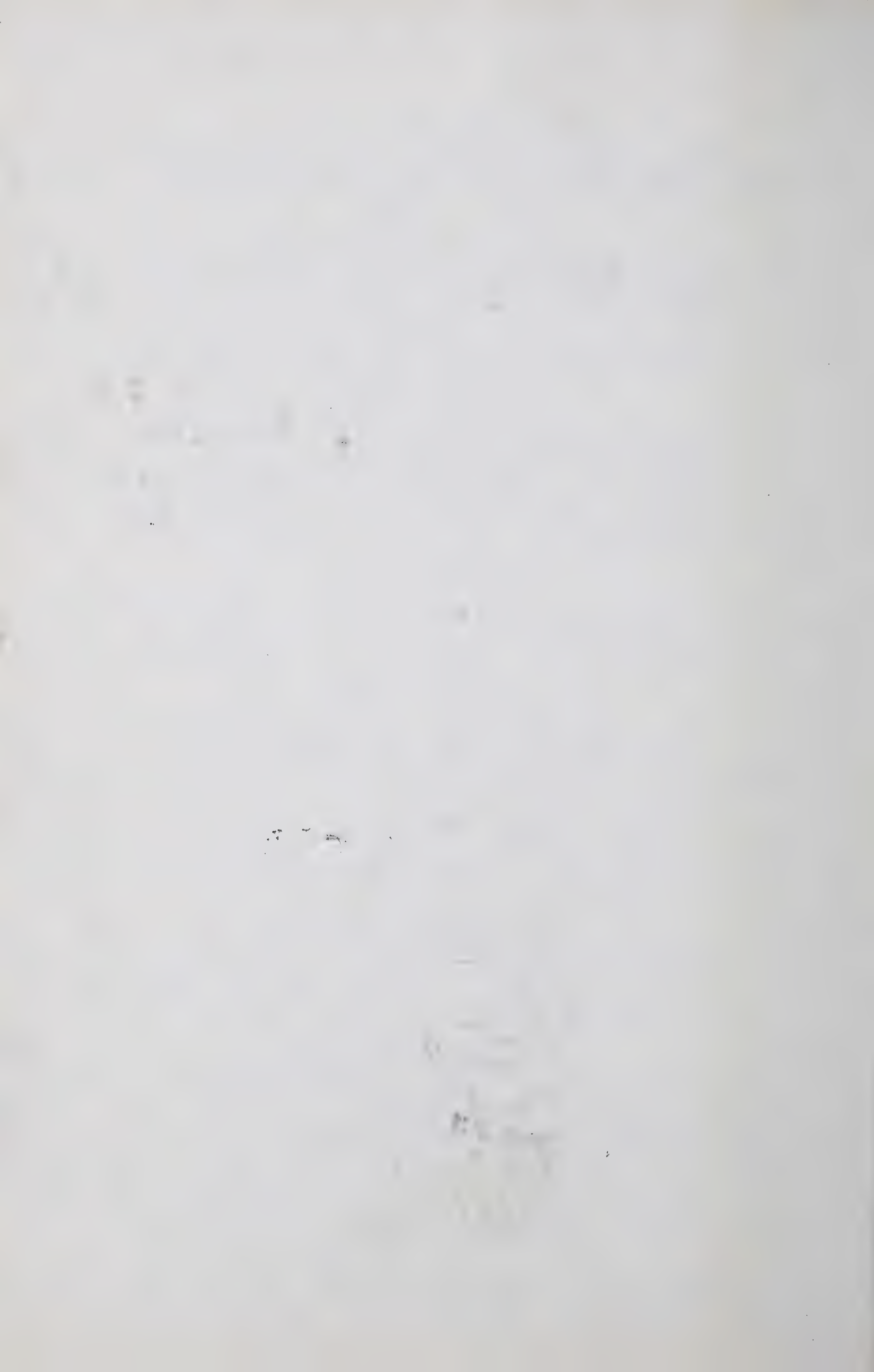
78 km. W. of Puno, 13,500 ft, Dept of Puno, Peru

March 25, 1952

- 804 Antiscomys pictus ^{embos 11-CR: 5st; 3L} [202] x [77] x 24 x 21 76g ♀
 805 Akodon jelskii ^{no embos.} much mammary 175 x 71 x 25 x 19 46g. ♀
 806 Akodon jelskii testis 7mm. 173 x 72 x 25 x 18 37g ♂
 807 Akodon boliviensis testis 11mm 173 x 59 x 20 x 14 46g ♂

March 26, 1952

- 808 Phyllotis sublimis ^{can't count bumps, very early preg.} 134 x 45 x 21 x 19 24g ♀



K. Pearson
1952

17
Huaylaco
55 ~~km~~ ^{mi} ENE of Arequipa, 15,300 ft., Dept. of Arequipa, Peru

March 30, 1952

- 809 Chroeomys jelskii ^{no skin, no skull}
^{much mammary tissue, Placental scars}
810 Phyllotis (darwini) chilensis ^{u.g. stent; vagina open.} 168 x 83 x 23 x 22 22 gr. ♀
811 Chroeomys jelskii testis 7 mm 189 x 83 x 24 x 19 38 gr. ♂
812 Phyllotis (darwini) chilensis ^{preg. 4 wks; 3 left. Bumps 6 x 7. Much mammary.} 241 x 117 x 27 x 27 67 gr. ♀

Hda. Pichupichuri, 12800 ft., 8 km. NW Huacullani,
Dept. of Puno, Peru

April 9, 1952

- 813 Cavia ^{vagina closed, uterine vascular, 2 faint swellings in left horn none rt. total length 193 TL} 193 TL ♀
^{2 orange c.l. in left ovary; none rt. Tag rt. horn. Nipple slender, 2.5 mm.}
814 Cavia ^{vagina closed. Nipples 5.5 no milk} TL - 220 ♀
^{Preg. 2 large emb. on rt. one ♀, one ♂ 73 mm CR, 115 TL}
^{rt. side in more uterus in Bonin's well haired}
815 Cavia large scrotum. Testis 21 mm. S.V. 95 mm. 208 ♂
816 Cavia ^{vagina closed. Nipples 6, milk.} 232 ♀
^{3 emb. rt. horn.; 18 mm CR.}
^{Left ovary with at least 1 CL; l. ov. inc ut.}
817 " ^{vagina closed. Nipples 5 mm. No milk} 210 ♀
^{2 emb., rt. horn. 2 large CL rt. ov. none left}
^{left horn inc ut. in Bonin's. Emb. TL 103. ♀ and ♂}
818 " ^{nipple 6 mm, milk. Vagina closed. Left horn with} 211 ♀
^{placental scar, rt. horn? No consp. corpora either ovary.}
^{Tag left horn.}
819 " ^{vagina closed. Nipple 6 mm. no milk. 1 Emb. each horn} 236 ♀
^{26 mm CR. Rt. ov. big corpus, left ov. 1 big corpus,}
^{left. ov. with uterus.}
820 " ^{nipple 2 mm not slender. Vagina closed. Absorption on} 200 ♀
^{placental scar in left horn, no consp. CL in}
^{left ov. Rt. horn nothing, no recent CL in rt. ov.}
^{Tag around left horn}
821 " ^{Vagina closed. Nipple 2 mm, not thin. Uteri slender,} 195 ♀
^{no CL, Tag on left horn}
822 " ^{nipple 2 mm, not thin. Vagina not open. 2 emb. left} 202 ♀
^{horn. bumps pyramid-shaped, 1 cm. across, white}
^{chees. Embryo 3 1/2 mm, transparent, head + tail flexed}
^{Tag left horn. 1 CL rt. ovary, 1 left.}

April 13, 1952

2 km. N. Nevada Livini, 15,300 ft., Dept. of Tacna, Peru

- 823 *Elignodontia* ^{*puerulus hirtipes*} 1 testis 5 mm 161 x 81 x 23 x 17 16g ♂
824 *Akodon andinus* testis 7 mm no skin, no skull ♂
825 *Akodon andinus* uterus slender 127 x 51 x 20 x 13 15g. ♀
826 *Akodon andinus* testis 3.5 mm [121] x [44] x 20 x 13 12g. ♂
Pampa de Titire, 14,500 ft., Dept. of Tacna, Peru

April 14, 1952

- 827 *Phyllotis sublimis* 1? ~~*sublimis*~~? testis 10.5 mm 161 x 51 x 22 x 23 43g. ♂
828 *Elignodontia* ^{*puerulus hirtipes*} 1 CR. 5 emb., at horn. 177 x 80 x 25 x 17 35g ♀
829 *Elignodontia puerulus* ^{*hirtipes*} testis 9 mm 178 x 88 x 25 x 18 23g. ♂

Pampa Huaitire, 14500, Tutupaca, Dept. of Moquegua, Peru

April 21, 1952

- 830 Avocet largest ovum 7 mm. Several corpora lutea. 374g. ♀
831 Avocet testis 10 mm 400g ♂
Caccachara, 15200 ft., Dept. of Puno, Peru

April 24, 1952

- 832 *Atrocoma* ^{*cinerea*} 1 testis 18 mm [233] x [40] x 28 x 25 194g. ♂

April 25, 1952

- 833 *Atrocoma* ^{*cinerea*} 1 testis 14 mm. 228 x 55 x 27 x 25 133g. ♂
834 *Phyllotis sublimis* no emb. no skin, no skull uterus slender 150 x 50 x 21 x 21 33g. ♀
835 " " testis 3.5 mm. 120 x 39 x 19 x 18 19g. ♂
836 *Phyllotis darwini* no emb. no skin, no skull uterus slender 197 x 100 x 27 x 22 27g. ♀
837 " " no emb. no skin, no skull uterus slender [172] x [80] x 26 x 22 23g. ♀
838 " " no emb. no skin, no skull ut. slender 161 x 78 x 25 x 21 18g. ♀

Tres Cruces, 18 km. N. Panchartambo, 11,900 ft., Dept. of Cuzco, Peru

May 4, 1952

- 839 *Oryzomys minutus* ^{*aurillus*} in grass + rocks testis 9 mm 197 x 120 x 24 x 13 18g. ♂
840 *Akodon surdus*? in cloud forest testis 7 mm 210 x 104 x 23 x 15 31g. ♂



841 Akodon surdus in cloud forest. ^{testis 7mm.} 192 x 91 x 23 x 15 27 gr. ♂
May 5, 1952

Tres Cruces, 11900 ft, 18 km N. Puncartambo, ^{CR} Dept. of Cuzco, Peru
842 Akodon ^{bolivianus} ♂ Preg, 2 nt, 1 left. 25 161 x 75 x 19 x 13 32 gr. ♀
843 Akodon ^{bolivianus} ♂ testis 10 mm. 157 x 68 x 19 x 12 24 gr. ♂

May 6, 1952
844 Akodon surdus Melanomys? testis 6 mm 181 x 89 x 22 x 14 25 gr. ♂
845 Akodon surdus testis 2 mm 170 x 85 x 23 x 13 16 gr. ♂
846 Akodon surdus testis 6 mm 194 x 90 x 23 x 15 28 gr. ♂
10 km. N. Puncartambo, 10400 ft., Dept. of Cuzco, Peru

May 7, 1952
847 Thomasomys ^{aureus} ♂ at. slender, no emb. 271 x 160 x 33 x 21 45 gr. ♂
848 Oryzomys ^{longicaudatus?} ♂ at. slender. no emb. 142 x 88 x 24 x 12 9 gr. ♀
849 Akodon ^{bolivianus} ♂ no emb. 142 x 64 x 19 x 12 14 gr. ♀
850 Oryzomys ^{longicaudatus} ♂ at. stout, no emb. 218 x 119 x 26 x 14 25 gr. ♀
851 Oryzomys ^{longicaudatus} ♂ at. slender, no emb. [167] x [92] x 21 x 14 11 gr. ♀
852 Oryzomys ^{longicaudatus} ♂ testis 3 mm. 195 x 112 x 27 x 13 18 gr. ♂

May 8

~~853 Peromyscus 218 x 88 9 gr. ♀~~
May 8, 1952
853 Oreolestes inca ^{coluata} ♂ no emb. 214 x 112 x 21 x 14 22 gr. ♀
854 Oryzomys ^{minutus aurillus} ♂ testis 4 mm. [176] x [107] x 22 x 13 10 gr. ♂
855 Akodon ^{bolivianus} ♂ no emb. 135 x 65 x 20 x 13 11 gr. ♀
856 Oryzomys ^{longicaudatus} ♂ 3 nt. 3 left emb. 28 mm. 232 x 130 x 27 x 15 40 gr. ♀
857 Thomasomys ^{aureus} ♂ testis 5 mm. 350 x 200 x 36 x 23 60 gr. ♂

40 km S.W. Chalkuana, 14500 ft., Dept. of Apurimac, Peru.

May 12, 1952
858 Chocomys ^{jelskii} ♂ at. slender no emb. 150 x 69 x 24 x 16 16 gr. ♀

1952

859 Chrocamp ^{jelskii} 1 testis 3mm 143 x 65 x 23 x 15 14gr. ♂

May 13, 1952.

860 Akodon ^{bolivianus} 1 testis 11mm 178 x 72 x 19 x 12 32gr. ♂

861 Chinchillula ^{sahamae} 1 ut. slender. 210 x 89 x 32 x 30 68gr. ♀
no skin, no skull

35 km. ENE Pucuro, 14600 ft., Dept. of Ayacucho, Peru

May 14, 1952

862 Phyllotis sublineis testis 3mm 149 x 57 x 22 x 21 29gr. ♂
18 test. NW Pucuro, 11500, Dept. of Ayacucho, Peru.

May 16, 1952.

863 Akodon ^{bolivianus} 1 testis 11mm 170 x 73 x 20 x 13 28gr. ♂

5 km. N. Nazca, 2400 ft., Dept. of Ica Peru.

May 17, 1952

864 Mus ^{musculus} 1 ut. short, no emb. 140 x 71 x 18 x 13 10gr. ♀

~~94 x 39 x 11.5 x 6~~

Pearson, A. K.

1952

Species acc'ts.

Peru

note on
multifunctional

Pearson
1952

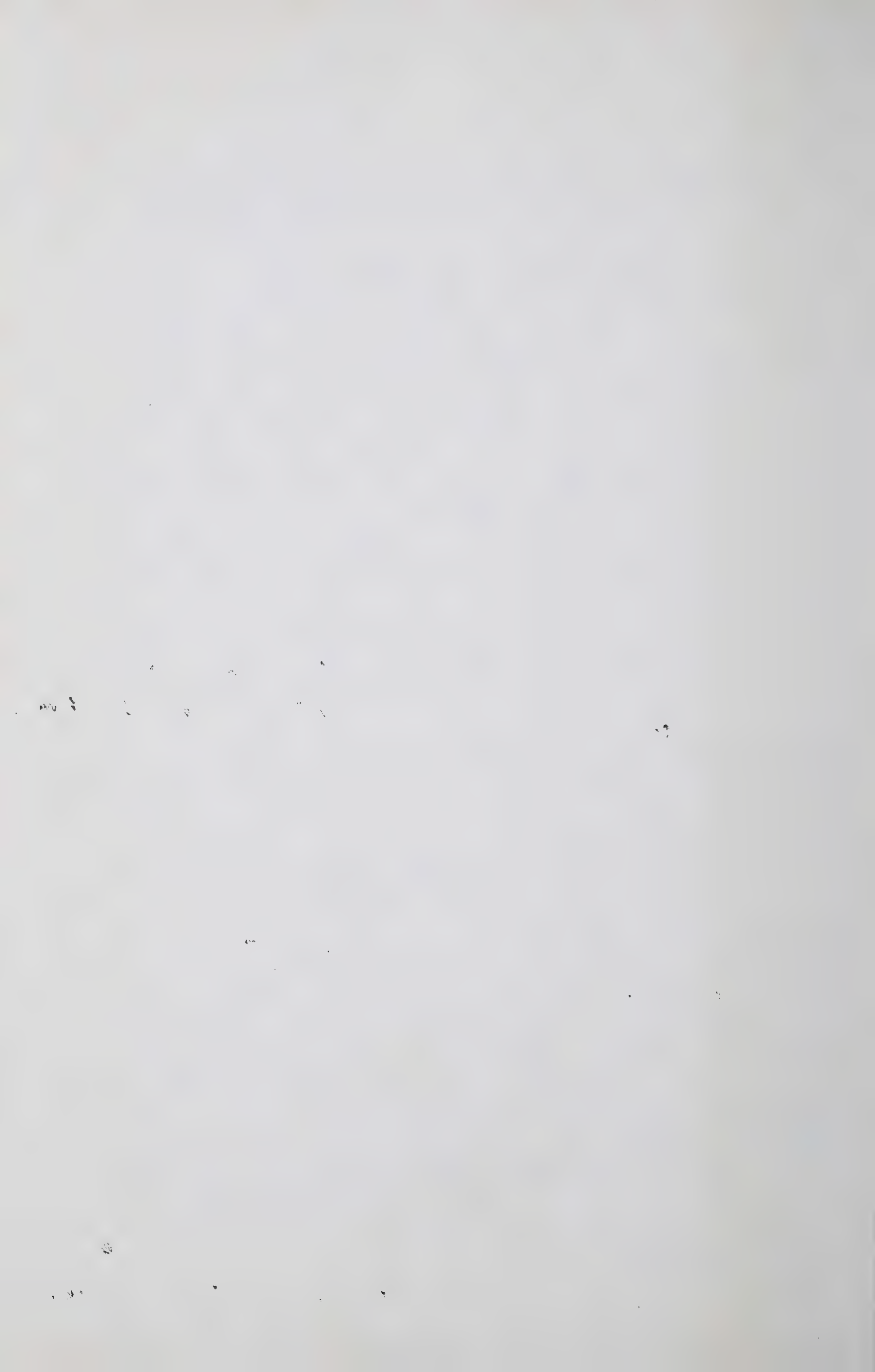
notophila notata

Feb. 26 - 82 km W. Puno, Dept. of Puno, Peru.

Walking along road, heard ~~2~~² perdis "chirps" - one chirp following close on the other, but the sounds coming from about 100 yards apart. Finally located, up on the hill, a bird standing with head up - it was in the direction of ^{one of} the calls, although I did not see ~~to~~ it give a call. Looked like a ♂. This bird stood very still for a while and then suddenly lowered its head and dashed to the right for the nearest clump of grass and squatted under it. Soon from the left came walking another perdis who headed for the clump of grass in a hesitantly manner. When it got to the grass clump where the first bird squatted, there was a skirmish, with the second bird being chased and then flying 10 yards where it landed and hid behind a grass clump. The original ♂ kept running, and passed within several yards of the grass clump but didn't stop. Soon he slowed down and a short while after I heard "chirps" coming from his direction again.

Feb. 27 From 10-12 watched the nest #1, checked first to see that bird was on it. Sat above it, saw no activity. Bird still there when I left.

At 3:30 sat on hill to south of nest, about 50 yds away. Bird on nest. At 4:55 it

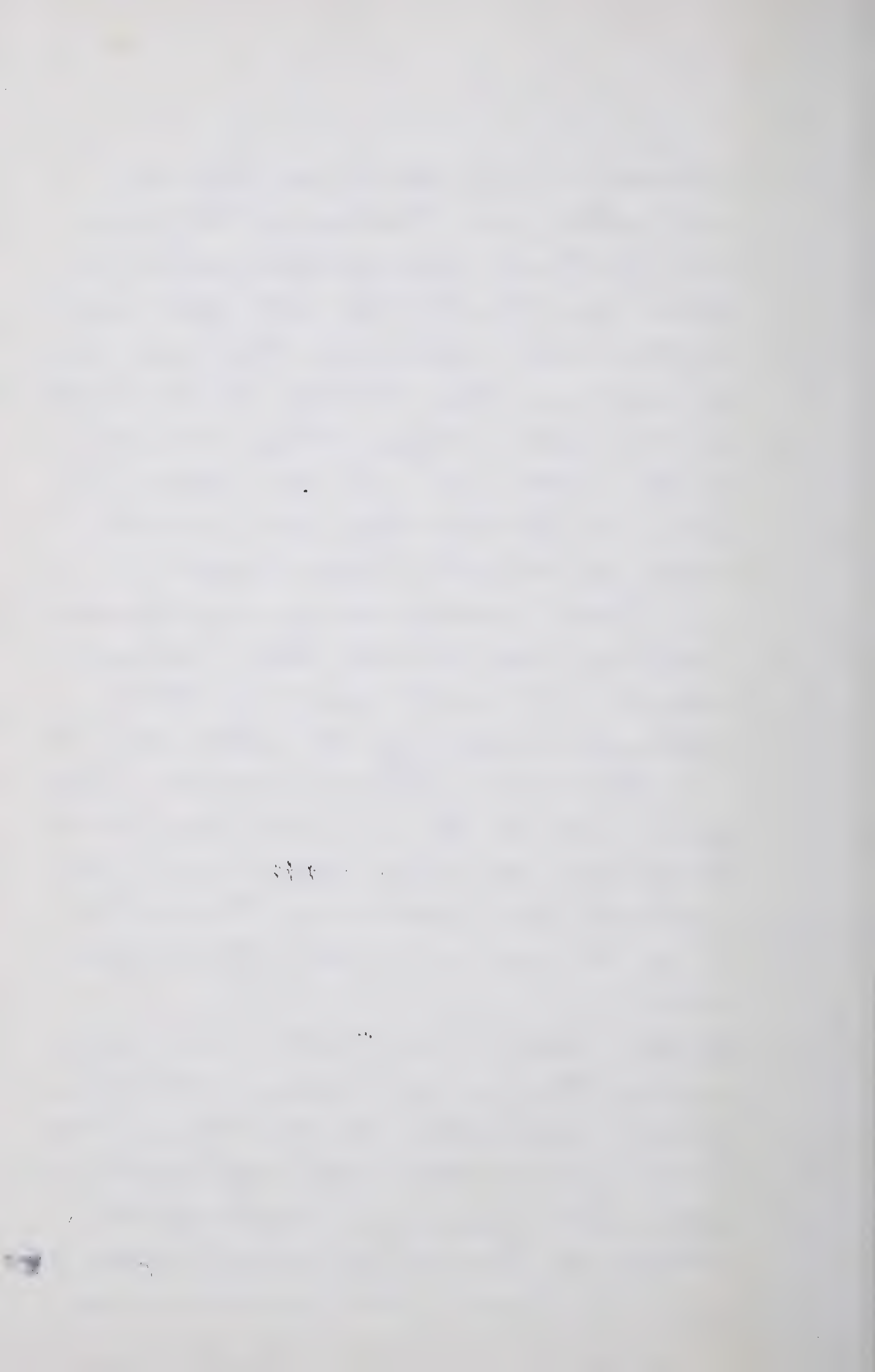


appeared on north side of nest, stood very still watching me. Feathers on top of head very flattened, neck pulled well in, it looked quite female-like. It took a few tentative steps, jerking head backwards about 20-30 times. Neck stretched out, crest appeared, looked more male-y. Walked down the gully, watching me. The first batch of ichu it put its head down and ran about 10 feet behind grass clumps.

Closely watched nest for next hour and half but bird did not return. The sun set at 5:35, a cold wind was blowing, although t° was only 44° . Dark at 6:20.

About 4:15 a ^{bunch of} llamas + a shepherd + puppy passed right over the nest, but the bird didn't flush. Some of the llamas stepped within inches of the nest, some jumped over it. The shepherd was in the rear and walked within a yard of the nest.

Feb. 28. About 10:30 A.M. sighted a lone feeder on green flats by river. Feeding in a desultory fashion, walking about 12 steps between pecks at the ground. Soon headed up hill with more determination. Went some 150 yds. up hill, disappeared. ² Searched the area for nests, but could find none. It looked like a male.

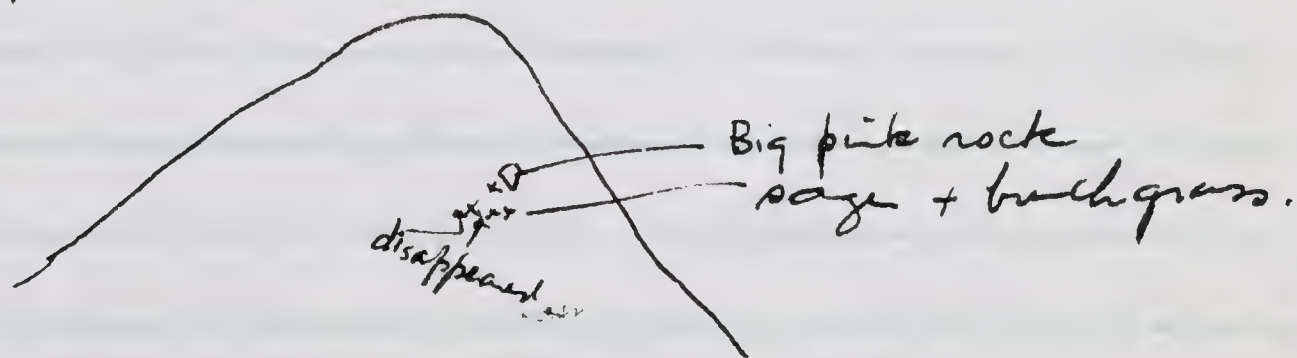


Feb. 29 Watched the hill across from camp from 8:30 - 9:30 AM but saw no birds.

This afternoon went nest-hunting high in the hills. Heard one bird "piping" but in spite of the nearness of the call I couldn't see it.

A little "piping" across the river after sundown although no birds could be seen. Wind started blowing a little before sundown.

March 1 At 7 AM watched a large bird (♀?) feeding ^{straight across from bus} on the green flats. Soon headed uphill, got above phone wire, started ^{head down} racing for the right. Raced about 40 yds. and there I could see another bird who dashed under a bush a little to right. First bird didn't pursue, but went uphill more. Second bird fed on open green up hill, then disappeared at 7:30 AM.



March 3 At 2:30 was watching from bus window on slope across from us, trying to locate some of the "pipers". Finally saw a bird about 20 yds. up hill, going from left to right. Twice it put its head down and ran for a short way, but I couldn't see what it was chasing. Then, as it ran right in binocular field, I

saw another bird, head down and crouching,
running to the left about 10 yds. down the
hill from the first bird. This second bird,
certainly a male, came down into the green
flat to feed but nervously kept looking
about him. Suddenly from the right rushed
in another male who made for the first
male and after a short chase bill-to-tail,
the first male took off with screechings.
The second male & first male were of equal
sizes. The second male began to feed, and
in a short while turned up his tail in a display.
At that moment, within the same field of
my binoculars, a female came ^{down} across the
asequia (?) to join him. He would display
whenever she got near him. Once she chased
him bill-to-tail, but her usual reaction was
to dash about a yard away from him. After
about 15 minutes of this plus mostly feeding, the
male made a 5 yd. run to the right. She
followed him behind some grass, and they were
~~at~~ out of sight for about half a minute, after
which the male started at a rapid walk
up the hill. [It also started raining hard
at this time]. The female remained on the
green flats for quite a while feeding, coming almost
to the edge of the river. Squatted for about 10
minutes, then began to feed again. Suddenly,

single
nest
bill etc. >

evidence
below. >

with no apparent cause, she flew, screaming to the ichu at the edge of the green flats — no more than a 15 yd. flight. There she fed happily for a while and then started down the asclepias (?), and turned up the first gully on the right. We marked the place she disappeared and will look there tomorrow.

March 15 Some ice and snow on the ground in the morning, but not enough for tracking. I sat up the hill behind "bussy" in a corral and watched the green flats across the river. Heard some piping when the sun first arrived on the hill (I sat from 6-7:30) but saw no birds.

About 11:30 Payie and I went up to nest #1. He took a picture of the bird who was sitting on the nest, and I crept into the blind. As soon as Payie was out of sight some "piping" started about 100 yds. uphill from the nest, and was answered by piping from the nest. After some 15 minutes or more of this, in which the uphill piping moved about a bit, the piping stopped and before long I saw on the ridge above the nest, and about 40 yds. from the nest, a male bird walking uphill. When I ducked behind a grass clump, I changed position in the blind and he must have seen me for he came out with his head bobbing back &

forth and eyeing the bird. He walked quickly a little way down the hill + on the other side of the ridge. Soon appeared to regain confidence, pecking at food sporadically, and moved uphill again. He was watching the bird, and when he got high enough seemed distressed by what he saw. I think he probably could see my feet from that angle. He climbed on a rock, and necks outstretched, watched the bird carefully for a while. Then off he hopped + walked rapidly down into the gulley above the nest about 20 yds. I saw no more activity for about 5 minutes, so went down to the nest to see if there was still a bird on it. There was, and to me it looked like a female. The bird was long and curved, and she seemed to fill up the nest more than other birds in the same space. At the time I was looking at the nest, the bird up the gulley started jumping again and he kept it up for quite a while as I walked away. ^{at 2 PM} No further activity seen.

Other possibilities:

- ① ~~Two~~ Two males on one nest
- ② Another nest in vicinity

P.S. Payne is sceptical of my ability to tell what sex the one on nest was.

March #16 Reports on nest #1:

OP-7 About 7^{AM} Payne went up and found ~~a~~ a bird on the nest. Squirted it with purple dye + left.

At 8:30 Mary + Payne went up to the nest and the bird was off it. ~~She was~~ The bird

(seen first 6 ft. down gully from nest)
came back at 9:30 - ↑ and was a purple-dyed one.

I sat by the nest from 10 A.M. on.
At 10:50 A.M. the bird with purple (especially on its left side) left the nest, heading downhill more or less along the gully. I saw her flutters for more than 100 yds. It had a crest conspicuous all the time and looked somewhat aggressive for a male - held its head high etc. At 11:30 I heard piping coming regularly from down the gully. The bird who was piping seemed to be moving about somewhat. Piping stopped being regular about 11:50, became sporadic. I could see feathers covering the nest. About 12:10 I spied a lone female walking up-gully, about 100 yds. below the nest. ~~She~~ ^{It} walked to the nest, I saw it pick up the feathers covering the eggs and climbed onto the nest. This bird was also purple stained (left side especially), but looked more male like - skulking along with crest down, etc.

March ⁷~~8~~, 1952 . Report on nest #1

Q - 8 O.P. watched 6:20 - 8:15. Bird left nest at 7:45.

AKP watched ~~7:55~~ 8:15 →. Saw purple bird come over ridge behind nest + a little down hill, to the nest at 9:15. There was piping in the area from 9:10 - 9:15, and it

stopped when the bird got about 20 yds. from the nest. I didn't really see it make the same, although it probably was the same bird I was watching. No more piping after bird was on nest.

MK came up at 10:30. At 11:15 the bird (purple) walked uphill behind nest + down the gulley. Last seen about 150 yds away. At 12:25 a bird appeared [probably came up the gulley on blind side] a couple yards below the nest in the gulley. ^{a little} Piping down gulley about 1:20.

AKP back at 1:30. Bird easily visible on nest in afternoon light. Could see it preen, turned about a ~~bit~~ little on the nest, mouth open [sun was directly on the bird] x Nothing else, no piping → 3:30.

O.P. sat from 3:30 to dark. Bird left 4 o'clock. Piping not from nest for 5 minutes before bird left. Piping stopped soon after bird left nest. Bird fed about 200 yds down gulley, same slope as the blind. At 5:35 came at ~~top~~ fast pace back to nest.

March 9 at 7:40 bird left nest, walked to top of first ridge, flew 100 yds. across canyon and lit on lower part of slope in grass, preened for 10 minutes, then started feeding among grass clumps. Red color very conspicuous when left side toward me. Before and after bird left nest



there was piping from somewhere near nest to which the bird payed no attention. I watched it feeding within 50 yd. of where it landed until 8:30 when it disappeared into the brush in the bottom of the canyon. At about this time I heard a screech like that of a flying bird, but lasting several times as long. I didn't pick up my bird again until 9:20 when it returned to the nest.

March 10, 1952. At about 10:30 AM. I took the ♀ dummy Payne had made up to nest #1. Arrived there about 10:45, bird already off nest. The eggs felt warm but not hot. I placed the dummy about 12 ft. uphill from the nest, where the bird on the nest could certainly see it. Retired to blind. Due to lax watching I don't know when bird arrived but it (red bird) was there by 11:30, sitting calmly on the nest. If there had been any reaction or piping I'm sure I would have seen it.

About 3 PM. I took the ♀ dummy across the river and placed it next to a clump of grass in the open ~~grass~~ flats near the ichu. For about an hour afterward the children + I were at the river, so there was no activity about the bird.

As soon as we had crossed the road to the
bus, however, some piping started. At
first the piping was raucous, then it was
softer "whit", then raucous again. When I
located the piper he was coming down out of the
ichu about 10 yds. to the rt. of the dung.
1 ^{stopped piping} Crest up, and it looked quite large in relation to
dung. The bird walked within 2 ft. of the
dung and stood still examining it for about
1 whole minute, then turned and went off ^{40 yds.} to
the right to feed, resumed piping. Soon I saw
piper duck into grass and another bird appear
out of the ichu about 10 ft to the left of bird #1.
I am convinced both these birds were ♂♂. The
second bird ran to the place where the first
bird had been, looked about briefly until he spotted
the first bird, and then chased him ^{both heads down} hard, in
circles & weaving back & forth until first bird flew
screaming off to the right a short distance. Second
bird then made his way back to the dung,
pecking as he went, and walked up to within a
few inches of the dung. Either the dung or some
other thing (birds?) frightened him, and the
second bird ran up the hill and to the left. As
he crossed the usegiva there came into view
in the same field a pair of birds. The male of
the pair was displaying frantically and being chased
for his efforts. Gradually they worked their

way right towards the dung, and got a view
of same at about 20 yds (dung was on the other
side of grass clump so only head was visible, probably).
The ♀ of the pair looked startled & her necks started
bobbing. The ♂ stopped trying to display for a brief
while, but started to lead her up the hill. The
female followed him up to lichen covered rock
100 yds up the hill & there they fed & displayed
for awhile longer. Soon saw the ♂ dash
from about a yard away, mount & tread on the
female, who was obscured by a bunch of grass. He
made the usual change movements of feathers, ~~and~~
remained on top for all of a minute. When the ♀
arose I got the impression that the ♂ went off
over her head, but am not certain. Also got
an impression that there was a note at the
beginning of the copulation.

At this time could hear 2 sets of piping
on flats about dung, but couldn't see either
bird. Probably was same ♂♂ seen before.

Watched the couple above feed for a
while, then thought I saw the ♂ display and the
female subsequently started chasing him. Heard a
soft, long version of their flying screech as the
male, head down, tore through the grass. The female
chased him with her head held up. The male
would make a short dash, duck under some
grass, double back on his tracks, but the ♀ always

managed to find him again + continue the chase. The chase lasted about 5 minutes, when the ♂ took off screaming towards the right, and landed across the gully.

March 12. Went to nest #1 at 11:20. No bird.

Put dummy ♀ 20 ft. from nest, up ridge north of nest. (It was an improved dummy over that used the other day). At 11:50 piping started down the gully. Moved about quite a lot, may have been more than one bird. At 12 a bird on the second ridge north of blind flushed in front of an advance of sheep. Flew down into gully. Piping stopped briefly after the bird had flown, then resumed. Piping stopped again just before red bird appeared about a yard to left of nest. Must have come up the gully or on the slope below the blind. It saw the dummy, was a little nervous, jerking its neck and walking very slowly toward nest. Removed feathers + sat on nest. Shortly after — (maybe 5 minutes) the piping started again, and it sounded down the slope below the blind. Eventually I spatted the piper almost down to the main gully, ^(150 yds? p. nest) but did not have time to watch ~~the~~ it before it retreated at the approach of a india and dog.

March 13 AKP to nest #1 at 7:40 AM. Red bird on the nest. Piping on the same hill as the blind

as I approached. Stopped at my approach, but began again, down the slope from the blind, at 7:45. At one point heard 3 different pipers (only one near nest), none of which were the red bird. The red bird left the nest at 8:10, walked up the ridge but down gully, crossed over the second ridge to main gully where I lost it. Considerable piping in the next hour, but I couldn't locate any birds. Red bird sneaked into nest at 9:30. ^{Just} Saw her uphill from the nest about 2 yards away so I don't know from what direction she came.

MK went to the nest at 10:45. The red bird left the nest at 11:00. She missed its return - somehow it sneaked into the nest by 1:00 without her seeing it. No piping.

March 14 Went to nest #1 by 7:30 A.M. There was piping on the hill as I approached and soon after I was settled in the blind I could hear piping from up the gully, down the gully, and over several ridges as well as from the nest. About 7:50 a bird on the second ridge beyond nest took off screeching, but I couldn't place the trouble. At 7:55 the red bird left the nest, ~~up~~ walked up the ridge beyond the nest, down the gully to the edge of the main gully. There it stopped to preen and as it preened

I heard another flight + screeching from the second ridge beyond nest. I located three tinamous, all within a few yards of each other. One, which I took to be a female, was acting most belligerent. She climbed onto a rock and started screaming at the other two birds. The red bird at this point took a short flight with screeching across the gully to his feeding grounds. Soon lost him by trying to watch the birds on the second ridge. Also lost those birds.

A little while later I heard sustained screeching from the big slope across the main gully. Looking over, I located three tinamous. One was a male posturing actively to a female, who darted away at his advances. The other bird I didn't get any dope on. I didn't see any red on any of them, although they were pretty far away + I wouldn't be positive one wasn't red. I watched the ♀ (I think) wander away by herself for 10 minutes or so.

Bird returned to nest at 9:35, sneaked up gully.

March 15 Went to nest #1 at 8 A.M. There was piping down hill to left of blind as I approached. I thought the bird was off the nest. Looked

very little
piping >

on all the surrounding slopes but saw nothing for the better part of an hour. Then spied a lone bird (looked ♀, with light underparts and no brown rump) down to the left of the blind, sitting up on a rock & preening. Finally she moved off the rock and started up hill towards the blind. Lost her in the long grass but shortly afterwards there was a screeching flight in the area and a bird landed about 20 yds. from where I last saw the ♀, in the gully. Soon lost the second bird, ^{going down gully.} ~~at~~

It was then about 9:30 so I started watching the nest carefully to catch the red bird coming back. To my surprise, at 9:30 a red bird got off the nest and wandered down the gully but up over the ridge, and I lost him in the next gully. A little later there was a prolonged screeching near the bottom of the second gully and the red bird took off screeching & flew across the main gully. ~~to~~ As soon as it landed a ♀ ran up to it from a few yards away. The red bird immediately & frantically postured, and at the same time a second bird screeched & flew from about the same place the red bird had flown from, this bird flying down to the left of where the red bird & the ♀ now were. Momentarily the ♀ was distracted, and the red bird raced up the hill away from her. She tried to follow him,

piping, and once got close enough to ~~close~~^{make} him run again, but never caught up with him. This ♀ spent the next hour walking about piping, occasionally preening, and stopping periodically to peck at something on the ground or to look about her. Toward the end of that time she crossed ~~to~~ the main gully and came a little way up toward the nest. I left her there at 10:30, when Paynie started watching. ^{Red} Bird returned at 11:20. Paynie watched until about 12.

Started raining about ~~noon~~ 1:30 PM, and there was a stretch of no watching between 12 and 3 P.M. I went up with all my waterproof clothes on at 3:15. I couldn't see very well because of the rain, but there were birds piping all around and a bird on the nest. Heard consistent piping coming from the ridge above the nest, answered by piping just a little beyond the ridge. Finally spotted a bird ^{on the ridge above nest} ~~there~~ stretching out her wing and flapping them once or twice to get the rain off. I lost her for a brief while during which there was screeching and a flight over the first (nest) ridge ^{+ down to left}, but I couldn't really locate it. Next I saw her coming up from the left along the top of the nest ridge, and she placed herself behind a clump of grass and preened for well over half an hour. Piped

fairly regularly as she preened, and was answered by a fiver up the next ridge to the right. Finally spotted the ~~right~~ uphill fiver about 80-100 yds. above nest. For some reason this fiver was not chased. The bird sat for quite a while on top of a rock matching the blind and the ♀. As Paige approached the blind at 4:30 the uphill fiver retreated ^{more} uphill.

At one time in the afternoon I thought I could locate, by hearing, 4 different fivers in the canyon. This plus the bird on the nest makes probably a minimum of 5 birds in the area.

March 16 - Sat at nest from 4 PM on. Very little excitement. Bird (red) left nest at 4:35, furiously sneaking down gully. About 4:45 there was a little piping, some from near the nest which sounded like the nest ♀, some from up the gully. No more piping until 5:20, when there was a single pipe down the gully. Another single pipe about 5:30. Bird came back at 5:45.

March 17 - At nest ^{five eggs, 2 on top, covered, quite warm.} at 8:20. No bird. Nothing seen or heard until after 9, when the nest ♀ (sounded like her) gave a couple hoarse pipes somewhere near the nest. Bird returned within a few minutes of 9:30, although I didn't see the return. Back to nest at 3 PM. Bird on nest,

no piping. He showed no restlessness until about 4:30, and after that he did considerable shifting of his head. Once stood up on the nest but sat down again without looking down. At 5:15, as the sun was setting on the nest, he left the nest, first pecking at the eggs. I thought the pecking ^{motion} was probably arranging feathers. He seemed very reluctant to leave, altho obviously hungry. He even took a peck or two from nest before he climbed off. I waited until he was out of sight + went to look at the nest. One egg, on top of the others, had a hole about 3 mm diameter in it, & I saw ^a motion inside. Two other eggs had pip-marks where the shell was cracking, and the other two I didn't get a good look at. The top egg was pretty much uncovered by the wind.

Much wind from 4 PM on. No piping. Red bird went furiously & nervously down gully when he left nest.

March 18 - Up at nest #1 at 7 AM. Bird on nest. Some piping down gully as I approached blind but it stopped. Red bird got restless about 8, left the nest at 8:30. Went up the ridge, disappeared into second gully. When it was out of sight I went down to nest. One egg still on

top with hole in it. All other 4 had pip-marks. All were covered with feathers. The hole in the one egg looked the same size as it did last night.

Went back to blind. Could hear occasional piping. Could see no birds. At 10:30 the bird still was off nest. I looked at the nest on the way down. ^{Heard} Piping as I approached nest. Top egg had slid over & was no longer on top. Hole a little bigger (about 5 mm diameter). Others the same.

Back at nest at 12:40. Red bird on nest. Rather restless on nest, faking around it, preening neck & breast. At one time an egg, or a large part of one, popped out on the far side of red bird. He poked it under him again. At 2 o'clock I saw a grey fuzzy thing poked up on foot of the red bird, who poked several times at it before he got it below back again. Within a minute after that red bird hunched way out of the nest on the north side, picked up something off the ground and worried it briefly before he let it drop again. Egg shell? or feather? Came down at 2:30, red bird still on nest.

At nest again at 4:30 PM. Red bird on nest. Restless, faking around and around himself. At 5:15 either one or two birds started

calling close to nest. Red bird stood up, ~~jumped~~,
+ sat down again. As an ~~in~~ ^{dis}apposed
from the nest he sank further into the nest
and pulled the feathers up around him.
Several times during the watching I could see
a white flicker its head out under the
red birds chest.

I left the birds at 5:45, the sun
well down. Some calling still but the
red bird looks fixed for the night.

March 19

At nest at 7:20^{AM}. Bird on nest. At
7:45 some ^{at 8:15 am} piping started very close to nest,
perhaps from nest. Very rapid - every 4
seconds for a while. After that ^{at 8:15 am} piping
moved or another started in, but the
piping moved away down the gulley. Piping
stopped about 8:30. Bird on nest did some
picking and pecking. Occasionally would stand
up and look a bit far. On one such occasion
I could clearly see 5 young. At 10:20 one
young chick out on the edge of the nest and
tumbled out on the north side. Soon others
followed until all 5 were out at 10:30. Red
bird sat on nest until 10:50. The young
started pecking as soon as they were off the nest,
also semi-exploring about the nest, but they
stayed within 2 ft. of the nest. At 10:50 red bird

got off nest, headed down gully for some
steps, going very slowly and watching all
about him - especially the chick, it seemed
to me. He sneaked behind the grass clumps, watching
from behind them and seemed to pay no
attention to the chicks. Got about 100 yards down
to left and made a loop back. This took at least
15 minutes. He occasionally pecked at the ground.
Once he ruffled out his feathers and I saw
his deposit - within a yard of the nest. These
of the chicks gathered at his feet, and he turned
and set off down gully again. The last two
chicks straggled well over 2 yds. behind the rest.
There was little organization, for the chicks
sometimes preceded him a little or wandered
down to the side. By 20 or 30 the procession
had gotten about 9 ft. from the nest. Papa
did another loop, sat in the bottom of the gully
watching us and some deep going by that back
of the gully. At that point I left.

Looked in the gully from 3-4. Trying
to locate the red bird but couldn't find him.
I looked at the nest & it has a ring of large
droppings about it (about 12). The shells are
all broken & mixed with feathers in the
bottom of the nest.

AK Pearson
1952

nothofila

Tincupalca, 13800 ft, Dept of Puno, Peru

April 2 - Sat - watched nest #7 from the bus. O.P. had seen the bird on at 8:40, & again at 9:40 AM. Since the nest wasn't visible I had to go over & be sure the bird was on or off, which I did. At 10:40 bird was on the nest, also at 11:15 and at 11:50. At 12:50 bird was off.

Nine eggs, covered with feathers, under a sage bush. Removed and opened one egg which was about a week from hatching. The bird returned at 3:15, seemed somewhat worried about my grass & sage - trimming job, but I thought it climbed on. Still couldn't see it very well.

Next checked nest at 4:45, & bird was not there. Also, the eggs were uncovered. Pangie looked at 7:30 P.M., however & the bird was on the nest again. O.P. Collected the bird at midnight.

Transiti

Fidels

pentlandi

AK Pearson

Tyrannus pentlandi

Guaymas, 55 ~~mi.~~ ENE of Aregipa, 15,300 ft.
March 27, 1952 Dept. of Parr

Sat at nest #2 from about 2-5 P.M.
A bird had returned to the nest at 12:35 (see O.P.P.) and ~~was~~ still sitting at 2 P.M. ~~In~~ the nest from the bird frenet ~~movement~~ for a couple minutes, but spent a good deal of time reaching out of the nest to peck at something, frequently drawing an object in toward the nest and tucking it in. A few minutes before 3 P.M. the bird got off the nest and took a few steps South, which was also up-wind from the nest. There was a little low grass growing about a foot south of the nest which the bird pecked at. It would take a piece in its bill and throw it over either right or left shoulder.

Strong wind
blowing

About 12
min.

{ The bird did this about 100 times, also throwing both green + dried Pycnophyllum, which was about a yard west of the nest. Then the bird turned north + disappeared over the nest ridge. Inspected the nest - still 8 eggs - and most of the eggs were covered with the dried bits of grass.

Saw it take a
feather from rump
& tuck it into
the nest.

Bird came up the gully below the nest at 4:25. Climbed onto nest (didn't see what happened to grass), head facing south. Restless, pecking at nest, stood on eggs for a bit before it sat down. Gradually turned ~~at~~ around until it faced north again.

Interrupted by Indian + dog. OPP took over at 5 P.M.

AK Pearson
1952

Tinnunculus (cont)

Tracked in A.M. Flushed trio in green bowl
up in rocks to E. of blind of nest #2. Tracked back to
where one bird (with larger feet) separated somewhat from
the other two. Not enough snow to pursue.

March 28, 1952 - Went to nest #2 at 8:40^{AM} to relieve
O.P.P. No bird on nest since 7:30 at least. Bird
returned, walking up the gully below nest at 9:16.
Climbed onto nest, sort of wriggling its body, facing
north. ~~Then~~ Started nest building right away, wriggled
some more, gradually did a 180° turn, then
turned about a little more until it faced SE.
Nest building and an occasional preen for 20-25 min.
Then the bird pulled in its head until it could
hardly be seen as a distinct hump on the flat
rock-like body, and seemed to sleep for about an
hour. At 11 A.M. some sheep "mass"ed down the
valley about 300 yds, and the bird sat up and
began to watch them, also resumed nest building
although not so intensively as when it first came
back to the nest. I saw it put some back feathers
into the nest. Also tried to lean way out of the
nest to reach some grass bits around the nest. Some
were too far for it to reach, & at 11:40 the bird
got off the nest, picked up the grass bits, flung them
at the nest, and climbed back on.

Nothing more until 12:15 when CK + MK
came by.

March 29, 1952 - Went to nest #2 at 2 P.M. Bird
dozing on nest. ~~At~~ From 2:20 to 2:40 bird built
nest, preened. Several times pulled feather from
its back and tucked it into the nest. Weather
looked threatening and slight snow squalls

A K Pearson
1952

Timonotis (cont)

With very little precipitate started in soon after
2. About 5 the snow started in earnest.
O.P.P. took over. The bird mostly dozed from
3-5, with minor nest, building efforts.

Ctenomys
peruanus

K Pearson
1952

Ctenomys peruanus

April 8

Pichmichuri 12800ft, 8 km. N.W. Huacullani,
Dept. of Puno, Peru.

Watching tucos on the pampa from about 8 A.M. Many tucos visible, feeding. Some duck back into their holes backward, most dive in frontwards. Easily startled. Saw one startled by a lizard moving about a foot away, but the tucos recovered quickly and appeared unconcerned about the lizard after that. A hawk flew overhead, one tucos gave a bubble and ducked out of sight. Other tucos also ducked. No response to sea gull overhead.

By 9 A.M. things quieting down, fewer tucos out.

On Payne's Census Area I did some collecting, and saw several times some juvenile tucos that belonged to a lactating female collected earlier. They did not come out of the holes very far, but cautiously poke their heads up just far enough to see the hunter. They did much bubbling, both while they watched and underground. I shot one, and I believe there are still tens more. I did not see them eat.

~~Cavica~~
~~Paula~~

Pearson
1952

Cavia (Sala)

April 7-9 Pichupichuni, 12800ft, 8km NW. Huacullani,
Dept of Puno, Peru

I have seen attempted, if not successful copulations of guinea pigs here. Also saw one fight, although I was unable to collect the participants. Nose to nose, they franced around like a pair of sparring boxers, once in a while one or the other would make a lunge for the hindquarters of his opponent, and both would go tumbling around with squeaks and growls. Watched for about 5 minutes, then my shots with 22 drove them down holes.

Pearson, Carol

1969

Catalogue

*1 - 21

Journal

Ecuador, Peru

Carol Pearson
1969

Catalog

Mt. Cotopaxi, 4,000m., Province Cotopaxi, Ecuador

June 29, 1969

Rabbit? 5 mandibles + 1 palate

4 km. ENE Pucusana, Dept. Lima, Peru

July 1, 1969

chromosomes 2 ♂ Phyllotis darwini 240-125-27-26 42g. test 8mm.

2 mi SW Casapalca, 13,300 ft., Dept Lima, Peru

July 8, 1969

chromosomes 3 ♂ Phyllotis andium? 215-112-27-23 33g. test. 7mm. coll. by OP Pearson

chromosomes 4 ♂ Phyllotis andium 220-115-26-22 31g. test. 7mm

2 mi N Casapalca, 14,400 ft., Dept Lima, Peru

July 9, 1969

no skull 5 ♀ Phyllotis darwini 205-105-28-29 31g. No embryos

8 mi SE Chilca, Dept Lima, Peru

July 13, 1969

6

bird's egg

Found by Myrmel Leong - 2 in "nest" in dead Willow. Dried up + deserted.

Hacienda San Javier Alto, 3 km. NNE Chilca, Dept Lima

16 July, 1969

7 ♀ Saltator albicollis coll. John Davis 48g. inactive ovary

7 km SSE Chilca, Dept Lima, Peru

19 July, 1969

8. Skull only. Dead on beach.

9. Skull only. Dead on beach

10. Daption capensis Skull only. Dead on beach

11. Phalacrocorax Skull only. Dead on beach

12. Phalacrocorax Skull only. Dead on beach

13. ~~Skull~~ Skeleton. Found on beach

14. Porpoise skull. On beach

Carol Pearson
1969

Journal
Catalog

5 mi E
10 km S Yauco, 9,000ft., Dept Lima, Peru

21 July 1969

15. ♂ Phyllotis 195-100-25-20 29 gm. testes 10mm
16. ♀ Elaenia modesta skull not No molt
completely oss. 1 fat 21 gm. ovary inactive

23 July 1969

- 17 ♀ Phyllotis aninus Coll. by R. H. H. Horn 207-110-25-22 23.5 gm. imm.

Pomacocha, Yauli Valley, 14,212ft., Dept Junin, Peru

27 July

18. ♀ Akodon boliviensis 135-60-20-12 15g. no em.
19. ♂ Akodon boliviensis 162-65-21-13 25g test 7mm

29 July

- chromosomes
20. ♀ Phyllotis darwini Coll. AK Pearson 27 July 38
215-115-28-25 36g No emb; ut. 1.5mm

8 mi SE Chilca, Dept Lima, Peru

30 July 1969

- 21 Phyllotis darwini 230-125-25-26 39g test. 3mm.

6 June 1969
Quito

Quito Ecuador

We arrived a little after 7:30 am on an overcast but warmish day. The mountains and fields around the city are green; Fernando says this is the tail end of the local rainy season. Fernando arranged for us to stay in a hotel called Residence Florida on a few blocks from his own house, for \$4 a day per person, with meals.

After leaving our stuff, we drove (or rather, Fernando drove us) out Avenida John F. Kennedy north to la Mitad del Mundo, the grotesque monument on the equator. The road until right near there was pretty well lined with houses, but beyond that it is less populated. North of Quito is more arid, and there are a scattering of bushes over the uncultivated places and often agave along the road. Whenever there is agave we look for Patagona gigas because it likes the large blossoms, and we saw one near the equator monument.

~~The~~ While driving through this region we saw Zonotrichia capensis, eared doves, ground doves, Catamenia, black streamer-tail, many sparrow hawks. This country continued for awhile up the mountain behind the Mitad. We drove up to the rim of the old crater of Pululahua.

Pululahua

The slopes of the crater had a fairly lush

Caryl Pearson
1969

Journal

Quito, Ecuador

June cont.

shrubby cover with lots of orchid family and lots of *Pinus* blooming. The floor of the crater was covered with cornfields. Standing at the rim we saw some hummers; a tanager with blue back, red on wings + face; a grosbeak with yellow breast; a dark slaty Thrush with bright orange-yellow beak + yellow? around eye + yellow legs; 3 turkey vultures; a Buteo; martins; all dark flower piercers.

Hacienda La Pampa
in Pomasqui

After the crater we drove to Hacienda La Pampa, a supposedly operating vegetable or fruit farm that has old plants of all sorts, from brussel sprouts to spiny lemon or grapefruit trees. There this belonged^d to a friend of Fernando, Esteban Serrano, who agreed to have us for the night so we could trap. There we tried a strange fruit also called *chirimoya* that looks like nothing else except maybe a swollen, deformed cone of a juniper? but ~~has~~ its yellow pulp around large black, flat seeds taste like pineapple. These grew on trees in the gardens behind the house, which is an incredible dilapidated old stucco + wood job with ceilings about 12' high or more and smelling of bats or mice. The garden attracts hummingbirds, + Fernando sees at least 3 kinds there. We saw blue-eared, and also Spinus, and some small striped + crested flycatcher.

Cowl Pearson

1969

* Francisco León

Journal

June cont.

Quito, Ecuador

omasqui

The hacienda is in a grove of large evergreens (cypres?) that mark it from the distance.

After making arrangements for us to return to the hacienda that evening, we returned to the city + killed time until Pancho*, Fernando's assistant who knows how to do anything, showed up late and gave us a thrilling ride out to La Pampa. I finally realized all that horn-blowing is as much to warn kids, dogs, + people that you're coming as ^{to warn other} cars or demand they move aside. Pancho left us in Esteban's hands at 6 pm, + it was getting dark. Esteban drove us a couple kilometers to a road-trail that went up a steep gully (quebrada) on the steep ^{west} ~~east~~ slope of the mountains.

We set ³² ~~40~~ traps in various places here, in the dark, but lighted by the moon, + under the southern cross studded in the blackest sky I ever saw. And strange night noises came down the canyon and off the steep slopes - croaking frogs, some owl's scream, + a whips-poor-will. And a fog crept down the main valley.

27 June

From our dark room at the hacienda 5:20 am was still quite dark, but 5:40 was light; a very ambiguous sunrise since it was again quite cloudy + fog hung on the mountains.

Carol Pearson

1969

* Except of the 8 traps they put around the house we got
1 Mus with a lumpy tail, which Fernando says is due to
a flea.

Journal

7 June cont
Pomasqui

Quito, Ecuador

We discovered we had set traps some in a very old ^{8?} corn field with a few scattered bushes and rocks, some ²⁴ bunchgrass + yellow flowers; some along a ^{9?} somewhat rocky slope with small bushes + bunchgrass; and some along a dry stream bed with rocky ^{12?} ~~walls~~ ^{banks}. All this area was quite dry, with dusty-gravelly soil. We caught nothing. * 5

Up the canyon there was somewhat lush vegetation (good sized bushes), and quite a number of birds were calling. Those I saw or recognized were the eared dove (Zenaidura macroura), the ground dove they have here (rufous on wings), sparrow hawk. In the very old cornfield there was a small very plain gray-brown flycatcher (at least he sat on stubs + waited + then flew out after an insect) with a dark tail; not shaped like ordinary flycatchers (eg Empidonax). The doves up the canyon were making what were similar to band-tail pigeon courtship flights, + there were quite a number of them (^{30?} ~~40?~~). There were a few mosquitos here.

Esteban then showed us the Rio Morjas, which there is at the bottom of a great ~~step~~ canyon with almost perpendicular walls. We saw a bridge over the river, a stone arch one, and a small bridge over an old arroyo that the conquistadores bridged on the way down from Colombia, según Esteban.

Carol Pearson
1969

Journal

June cont.

Pomasqui

Quito, Ecuador

Across the river ^{was a hill} he said was an old Inca temple. It was well-covered I guess.

Quito

After breakfast Esteban drove us back to the city, and around 10:30 we went to la Universidad Católica, where Fernando teaches. We talked a good while with Hermans Armas, the botanist. Then we went to Fernando's house for "lunch," and at 2:30 he dropped us off in the center of the city to shop for a map + a rapidograph. We went in the Cathedral Santo Domingo, with the encouragement of a kind little old lady in black, little as are all the people here. It was astonishing, the elaborate + lavish ~~gold~~ gold woodwork all over, and dimmed lights + lighted richness. And in a side altar they were changing the light bulbs. After shopping, we walked back to the hotel, a good long walk that got us drenched because it rained, poured, and lots of stores because of our dress, ~~or rather~~ ie jeans + boots, and our behavior, ie walking in the rain instead of waiting it out in the shelter of a doorway. Downtown Quito streets are ~~overhung~~ overhung with lots of neon-type signs, + the sidewalks are only 2 people wide.

Mt. Pichincha

Surprising us, despite the rain, which let up by 4, Fernando + Pancho showed up + we drove up the east face of Pichincha until a slide blocked the road. We had to pay a man 20 sucres to

Quito, EcuadorJune cont
Pichincha

go all the way up. We decided to walk from the car a ways + set the traps, even if it looked too lush, since we couldn't reach the place Fernando had in mind. We were at about 3500 ~~or was it~~ 3800? meters. There was grassy, weedy, flowery open fields (tall grass - 2-3'), and "choparral," thick, tall shrubs + bushes with a good ground cover. Things were definitely tropically green + varied.

The bushy areas were great for birds, + there were lots of all sorts of flowers, including big ones that just looked like hummingbird flowers. There were hummers all over, maybe because the rain had stopped, maybe because it was evening. We saw ⁴ kinds of hummers, ~~of which I remember~~ 4: *Patagona gigas*, blue-winged? (the 2nd largest species), buff-legged, + a ^{Caneleg} rusty-colored one with iridescence on the rump. Also, we saw an ^{ant. pitta} ~~great~~ ^{Grailaria} on the road, blue-headed tanager, flower piercers, *z. capensis*, + perhaps a caprimulgiform. At dusk there were frogs croaking and calling, including one that sounds like a clear plik! of a water drop in a cave or a tap on some musical wood.

The view down of over Quito is magnificent, + the clouds cleared a little to allow us to see Antisana and ?. Fog started down the valley + around the mountains, but we

Carol Pearson

1969

Journal

Quito, Ecuador

7 June cont:

MT. Pichincha

8 June 1969

ended up with moon (about $\frac{3}{4}$). The temperature all day was sweater-cool except after the rain colder.

We started up the mountain about 7am from the hotel. It ^{was} a cloudy morning, but continually changing. From up on the mountain the valley would sometimes be obscured for some minutes but then clear. We could see the bottom of the snow of Cotopaxi. In the traps we got 3 hopefully Phyllotis and 2 probably Acodon. The Phyllotis-like are generally shaped like Peromyscus, with fairly large eyes + ears and long tail, but bulkier and woolier. The fur is somewhat matted in appearance and in general red-yellow-brown in color. ~~Of~~ The one was caught under a bush in a grassy-weedy meadow with a thick cover of herbaceous plants, and the other along the dirt road, along which grass + ^{herbs} weeds grew. The traps along chaparral didn't catch anything (30 out of the 70).

Lots of the vegetation is familiar, like lupine bushes, sorrel?, and a bush somewhat like Baccharis. A conspicuous tall (\rightarrow 15-20') herb is Siphocampylis (?), which is a single stalk with shaggy leaves coming off it and large whitish flowers. The ^{+ flower piercers} hummingers are always around these. We saw the same birds this morning as yesterday, with the addition of a gorgeous Buteo, prob. polyzona white phase. It was

Cowd Pearson

1969

Journal

Quito, Ecuador

pure white below + on the sides of the face + the tail except for a terminal black band about 1-2" wide. The underside of the wings were light, with some of the gray from the upper surface darkening them, (I don't know if the white of the tail extended to over the rump.) The top of the head down to the eyes was gray, + the back of the one we saw well was cinnamon. Dr. Ornes says this was the ♀, that the ♂ would have a gray back. There was a pair soaring above the slope. Today I also got fairly good looks at the cotinga, as it flew away showing its white tail spots on an otherwise large, plain dark bird, + I saw a hint of the crest of a perched one. The crest, as I saw on a skin later is of longish, floppy reddish feathers. The flowerpiercer (Diglossa) I saw well was all black except for a blue patch on the shoulder. The flowerpiercers keep up a good competition with the hummers, who Fernando says usually flee, except for Patagona. The most common hummer is Canela, which is quite energetic and sassy. We saw one chasing Patagona, + once a giant hummer flew by with a Canela hanging onto its tail with feet? (montada en la cola).

Fernando considers this slope of Pichincha (this slope of this ridge) to be a really good

June cont.

Pichincha

for the tips of the
wings, which were
dark.

Carol Pearson

1969

Journal

Quito, Ecuador

June cont.

native habitat, lots of good bushes w lots of birds.

While we were on the mountain we heard shots + saw the were from the people (man + 2 boys) who were at the radio tower of HCJB (Hoy Cristo Jesus Bendice = La Voz de los Andes). Then we saw them shoot at the hawks, so we stopped + argued with the man about hunting, which he maintained (+ surely still does) is sanctioned by God (his god anyway). And to better the measure, we told the owner of the land, who prohibits hunting, what these Americans were doing, + he the owner went + got a pistol to go talk to them.

We descended at about 10³⁰ am and put the mice in jars at Fernando's university. Then we went to see Gustavo Orce, a self-taught naturalist at la Universidad Politécnica. He's got quite a collection of birds + mammals (and other things?), but it's all thrown about in different places + treated poorly. He didn't know what *Phyllotis* looks like, which means no one in Quito (or Ecuador?) does.

[Who believes in organization?] Pichincha from the east is a green mountain, with lots of fields and more planted forests of Eucalyptus on the lower slopes. The steepest parts are "chapanal," which Fernando wants to save by having people donate land

Carol Pearson
1969

Journal

Quito, Ecuador

28 June

to The university, but need for charcoal and stone quarries might press more.

Quito

Mid-afternoon we took a taxi to the center of town, Plaza de la Independencia, to look around + at churches.

We looked in several but still liked Santo Domingo best. In the plaza Myrmel was besieged by shoe-shine boys who thought her dirty hiking boots were a good target.

Pichincha

We set traps up on Pichincha again this evening, a very cool one (it got down to 6°C in the city this night). Added streamer-tail to our list of Pichincha hummers, + I was reminded we'd seen Thrushes up there.

9 June

This evening + night I started feeling rotten, + by Sunday morning was quite weak + sickly feeling, so I didn't go check traps.

opaxi

We left about 11am for Cotopaxi with Fernando, his wife + 2 brothers. I couldn't say how to get there, because the road to take is an inconspicuous dirt one that turns off the Panamerican highway. Other weekend drivers knew about it though. We went through variations on páramo vegetation, depending on how rocky or bushy, but usually with styxia? The bunch grass. Up high there was a sort of flat valley floor that was heavily grazed by herds

Carol Pearson
1969

Journal

Quito, Ecuador

June cont

of scraggly, small wild horses. This valley floor was quite rocky, with boulders (lava?) strewn all over, but the steep hills that surround the valley + rose up to the peaks were green + had bunch grass. Among the boulders was a lichen + cushiony plant vegetation. Cotopaxi rose up above us here, + the clouds cleared for awhile so we could see his dazzling glacier-covered splendor. In other parts we saw the snow-covered peaks of Chimborazo + Antisana, all spectacular against the blue sky + contrasting with the brown peaks.

Upon this high (3900m - 4000m) puna type páramo were lapwings, which were in groups at this time of year. Fernando says nothing is known about their life history. Also we saw a young curacara come + feed on an ~~ant~~ old horse carcass that had 2 condor feathers by it. Also saw Muscisaxicola^{alpeña}, a lge. falcon, a hummer, a Certhiodon, + a med. sized dove w white at the bend of the wing.

Alfonso found some parts of skulls of 3 sizes of small mammals. (CP #1)

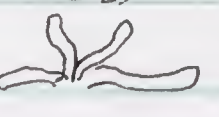
J Pearson
1969

Journal

Papa León Trece, 150 ft., Depto. de Lima, Peru

June 1969

Myrmal and I arrived in Lima about noon, joined A K +
OP Pearson, ^{Ray Hilborn,} and Mrs. Davis + kids, and drove south through
sand hills along the coast to Papa León Trece, a
"housing development" a la Peruviana near Pucusana.
On the drive down we saw several vultures (black?) ^{flying} and
pelicans, and dark gray gulls and some gray + white
gulls sitting on the beach. Also a vermillion flyc. on a
phone wire. The only water hereabouts comes
up from wells.

Ray, Myrmal, + I went to some hills 4 kilometers
east NE of Pucusana and set ^{live} traps. The hills are
steep and rocky, and in the gullies + washes and
on the tops of the hills (where the fog is closer)
some type of cactus grows, of this form: .
Most of it seems dead, + you have to look close to
see that some branches are green + fleshy. I found
two small cactus, maybe the same kind, with long
red flowers with yellow inner parts. Cactus is the
conspicuous plant, but lichens are more ubiquitous,
all over the dusty ground, the rocks, + the cactus.
Up at the top of the hill I climbed there were
occasional ~~clover~~ ^{with clover-shaped leaves} plants + some lily-family plants.
(The sky was continually foggy + seemed to come in
closer as it got later (5:30ish) and a bit breezy, but
it wasn't cold.) The hills because of the dry + still weather
and tracks stay around a long time, + people tracks +
paths were all over, + there were trails crisscrossing the

erol Pearson
1969

Journal

~~Papa~~ Leon Trece, Dept. of Lima, Peru

30 June cont.

hills as though goats or sheep had grazed them once. There were some old rock wall corals in one valley, + around them lots of rabbit-like droppings (goat?).

I set 29 traps, 20 going up a low gully with occasional cactus sticking out of the rocks, + 9 going up a steep, rocky wash that got more cactussy. ^{15 steps apart \approx 35-37 feet.}

In terms of animal life, what looks like there might be the most of is spiders living in holes under rocks. They must dig some, because the dirt looks dug there, + they make irregular, fine webs in the holes. One spider I saw was large (2" diam. w legs). I also found a small dusty spider, maybe crab spider?, under a cactus branch. We found scorpion skins, a grasshopper, a beetle, a moth-like insect, some seeds, a lizard dropping.

Birdwise: Asthenes cactorum (small dog size) (Canastero de los cactus) feeding on cactus branches. In same area, an old tangle of sticks in a cactus, prob. nest of Asthenes. Sialis rainfordii - a couple near top of hill. And I think a swallow.

(Birds identified w help of Kopsche Las Aves del Departamento de Lima)

1 July

Dawn is even more ambiguous here than in Quito; here the fog is closer. You could see well enough to look for birds about 6am. We went to check traps then + then exploring to find a good Tillandsia.

Paul Pearson
1969

Journal

Papa León Trees

1 July

In my trap line were 2 Phyllotis darwini, one near the base of a cactus and the other in a tumble of rocks in the bottom of the gully. Looking under rocks with DPP I saw the tail of a lizard (gecko?), one with dark and light bands. Up near the top of the hill we found some droppings too large for Phyllotis.

~~The~~ We looked for Tillandsia further N and E in that area, and found some on some hills that were dusty, sandy, in places muddy from garúa. Also, these hills were apparently an old ruin being reconstructed half-heartedly. We found a large scorpion under a Tillandsia and a handsome bug (1½" long) on one, and saw quite a few what we think are fox tracks. There were at least two kinds of Tillandsia.

A second good stretch of Tillandsia we found 8 mi. SE of Chilca, there on both sides of the road. The hills there are sandy-dusty also, and the Tillandsia grows in kind of mats, most part of which is dead and black. Here we found mouse tracks, ~~most~~ fox tracks, a broken egg shell, tracks of a passerine probably, ^{+ collections of bird droppings (spiral).} There were lots more mouse tracks down along the highway, + some tracks across vast stretches of sandy dirt (800 ft). We returned here to set traps at about 4:30 pm. Then both Meryn + I found what looked like fresh tracks that must be Burhinus. The track is a thick-toed, three-toed

Carol Pearson
1969

Journal

Papa León Trace

1 July

one with a toe-to-heel stride of 10-11". Mymal saw marks where it scratched the ground.

My traps were a straight line through Tillandsia and down into a dry wash with mud bottom. 34 small Sherman, c. 35 ft. apart, corn + oatmeal.

7 km east NE
Pucallpa, 2000 m.

Another place we discovered this morning was east of Poma León on an extension of its road that goes up into the hills there. These hills are rocky, lichen-covered, w cactus (also lichen-covered). And, coming up among the rocks are big yellow lilies and seedlings of lots of other things. ^{A possible burrowing owl hole} ~~to~~ under a rock.

We haven't seen Tillandsia + cactus in the same place. I'd say now that cactus likes rockier hills, Tillandsia the dirtier, sandier ones.

2 July.

My traps at 8 mi SE Chila were empty, but there were lots of new fox tracks on the area. It looked like a pair had come through, scratching at the mats of Tillandsia in places + ^{once} ~~sometimes~~ turning it over. Then they followed part of my trapline + part of OPP's and headed off into the hills. Other traps on this area and along the road got 4 Mus musculus and 1 Phyllotis, which was up on a hilltop where there were rocks. There are irrigated fields w/in 1 mile of this place.

Weather today same as always - fairly low fog, not cold or warm.

We again went hunting for Tillandsias, this time north of Papa León and inland from the highway.

Carol Pearson
1969

Journal

2 July

Papa León Tree

At first all we found were garbage dumps + a military playground where armies had done exercises. Finally a dirt road led us into a wide, dry river bed with steep rocky hills with Tillandsia on one side and steep sandy hills with Tillandsia + dunes on the other. We climbed the rocky hill, which has quite loose + slippery soil. On a prominent rock was some bird whitewash, and a feather, ^{+ a dragonfly wing} a 1° or 2° with pale buffy spots down the ^{widener} ~~larger~~ vane side and some darker spots on the narrow side. Perhaps burrowing owl. OPP and RH set live traps here, + OPP found a gecko in an old artillery shell. The river bottom has some large boulders, some steep banks with occasional burrow holes, some old ~~sink~~ ponds now dried mostly with huge cracks in the clay-y mud, a few pepper trees + other shrubs, some stretches of hard dirt w lichen covering. Here I found a small dead lizard, OPP a lge. dragonfly, + AKP a live gecko in a hole. Up on the sandy Tillandsia there were fox tracks, a dead beetle, + dog tracks. The sand was wet for the top 2+ ". This location is 5½ km. ~~east~~ NE of San Bartolo.

RH, ML, + I went up the valley behind Papa León to a location 7 ~~km~~ km. east NE Pucunana ^{200 m}, the valley + hills with lilacs in bloom + sprouting herbs.

Carol Pearson

1969

Journal

Papa León Tree

2 July

I saw 1 or 2 burrowing owls + then the garia came on thick, so I saw no more.

In driving through irrigated parts we saw lots of mockingbirds, + over one dump we saw a turkey vulture. In town we see blue + white swallows, Zonotrichia, and a gray gull (Larus modestus)

3 July

6:30 - 7:30 again up the valley at 8 km east NE Pucunsa. fog usually too thick to see up the hills where some birds were calling. The rock outcroppings up the hill have great mounds of some bromeliad on them. Rest of morning spent at 5½ km NE San Bartolo, where we caught nada in the traps on the rocky slope and moved the traps across the river valley to the sandy hills. I set 40 collapsible Shermans roughly 35' apart in the sandy Tillandsia but near to rocks of the top of the ridge in places. Oatmeal bait.

Birds!: A pair of miners on the sandy Tillandsia hill. They caught my attention with twitters + call notes as they flew over the ridge and down to the river gully. There they spent time around the mouth of a burrow under a rock sticking out of the river bank of the gully. One went in it once, + there might have been young bird noises. One sat at the mouth about a few minutes or so. Otherwise they didn't seem to be doing anything definite except preening sometimes. When I went near the burrow they came near + continued their calling. They cock their tail + run on the ground. The mouth of the burrow was not distinctive, didn't

Carol Pearson
1969

Journal

3 July

Papa León Trace

look like excavation, but there was some soft, fuzzy material at the mouth. The mouth was just the wide area under the overhang of the rock, + the burrow went back from this. The bird itself was pretty darn plain, breast light grayish with maybe a central speckle, back darker + brownish, sides pinkish or pale rusty. I'll need a better look. No white in wings or tail when it flew, but perhaps lighter outer tail feathers. Perhaps Geositta maritima.

A quite large hawk flew over watching me and then landed on a sandy hill for awhile. All dark above, chest + beginning of belly light tan with some speckles. Molting some primaries. I don't think it had the shape of Geranoaetus. While it was on the ground, standing, it looked huge too, + showed whitish above the shoulder, bird of coming around the front of his neck.

In the afternoon 2-3:30 we went further up the valley behind Papa León to a place 10 km. east NE Pucallpa, 250 m. Here is more rocky, steep hills, all lichen covered, more lilies + other plants but not cactus. At ~~the~~ a burrow of 2 owls were 4 pellets, 2 entirely of black beetle parts, ~~for~~ 2 with a couple scorpions and parts of 2 mice. The burrow was shallow + only about a foot deep in the soil and didn't look very used. There was lichen growing all around it, as elsewhere, + a rock in the mouth of the burrow. Here I saw a pair of perhaps miners - they'd fly from one slope to another. Also heard a strange w-wvrr! w-wvrr!

Carol Pearson
1969

Journal

Papa Leon

3 July

Heard a few crickets.

We drove south at night 8 pm-ish to the tillandsial so. of Chilca + thereabouts, looking for the mice along the road. We saw one by luck, a Phyllotis. Also we saw spiders by their eyeshine on the Tillandsia area + heard crickets there.

Around the house in the late afternoon:

Amazilia amazilia - all rufous tail, back, belly; greenish head, blue throat on one. Several on fig trees, but Pyrocephalus rubine was chasing them. This v. flyc. had bright red top of head and spot in middle of breast; breast ^{thelton} otherwise pale pink.

Also shook lots of Eupelia cruziana out of the trees.

Lots of Z. capensis singing.

4 July

Up to 10 km ENE Pucallpa to check traps first thing. I picked up some burrowing owl pellets from the a more-used burrow of the pair there. There were lots of scorpion tips of tails ^{on} ~~the~~ the rock by the burrow. The burrow was irregular, excavated ~~for~~ among the rocks, + lichen grew over most of the dirt out front, so it didn't look very used, although I think it's this pair's main burrow. There ~~was~~ was no garbage lying around, just some pellets with mostly insect parts + some small bones. One of the owls had a fairly dark head, while the other's head was light with "eye light" "eyebrows."

Rest of morning went to 5 1/2 km NE San Bartolo (Quebrada de Cay de Hueso). Nothing was in my traps. There were fresh Burhinus? tracks (weren't there yesterday).

Carol Pearson
1969

Journal

4 July

Paya León Tree

which I followed through some Tillandsia + then up off over the dunes for a good long ways before I ~~lost~~^{left} it. Up in the dunes, where there's nothing but sand, I also saw mouse tracks.

The bird tracks for awhile followed the tracks we had made the day before.

Down in the arroyo ~~more~~^{AKP} saw hummingbirds. We saw a sparrow hawk down in the lower river bottom.

End of afternoon we returned to Quebrada Cruz de Hueso, and I hiked up the ridge with Tillandsia to the dunes and then up to the top of the mountain, Mt. La Chimbonba we think. On the depressions on the lee sides of dunes were collections of small snail shells of several sorts and sometimes cases of insect pupae^{and seeds}. At the top of the ridge of dunes were fox tracks, supposed Bushius tracks, probably mouse tracks, and tracks of some passerine (1 1/8" long). The passerine jumped + scratched along places where sand was falling off the face of a ridge. Up beyond the sand and on to the top of the mountain was fields of lichen covering earthy or sandy or mixed soil. There were lots of the small burrows with little piles of dirt at the mouth like we see down on the flat. Saw a pair of sparrow-size birds, ~~sw~~ blackish, short tail. Under a few rocks that were at the top were several large crickets. Coming down the steep, sandy face of the mountain between two rocky ridges, I saw lizard tracks. On the ^{lichen-covered} rocks I found 2

Carl Pearson
1969

Journal

Paya León Tree

4 July

line snails.

After dark we walked around on the soft dirt flats + found geckos, which could move as fast as any lizard then. We heard bats and scared up some fairly large bird that had been on the ground.

5 July

Slept out there on the flats. In morning AKP found some holes with larger piles at the mouth + found lizards in two of them.

Drove up a canyon that led to a chapel in an area of goat corrals + rocky hills + a variety of green plants of bush size. Thrinocorus annicivorus was here - 2 males, I guess - both had black design on ~~face~~ throat + chest. They were fairly tame. Also here was a flock of 20-30 ~~g~~ sparrow-size brownish jobs that ran on the ground but wouldn't cooperate with me.

Puerto Viejo

Lat. afternoon went to beach south of Chilca - location 7 km. SSE Chilca, 2 m. On the beach were lots of Larus modestus, ^{2 Charadrius alexandrinus} and crab holes. On some off-shore islands and flying around were some Sula variegata, 2 turkey vultures, a gull all white with dark gray mantle and wings (but I'm not sure if it was big enough to be L. dominicans), and cormorants. Not any great numbers in this bay.

In the dunes + sandy fields in from the beach were small lakes with lots of reeds. Here were lots of lizards and tracks of rats, a mustellid w. 1 3/4" long forefoot, of heron + rail type things, + of Burhinus.

Carol Pearson
1969

Journal

Paya León Trace

5 July

Here I saw:

Finally! Burhinus superciliosus. One pair started to run away at my approach, but stopped and nervously preened their breasts and watched me and made a nervous noise. When I moved, they stalked further away + stooped sometimes tall, sometimes crouching. Sometimes they'd drop, or depress, their tails or start to squat. The two were identical, being mostly gray-brown with white abdomen and a prominent black stripe above the eye that makes the head look longer. The tip of the beak is dark, and there is some darker shade in front of the eyes, so the face seen from the front has an odd pattern. The eyes + legs are pale green. A second pair scared up + flew off when I was about ²⁰~~30~~ yds away + showed a flashy black + white wing pattern. They had a loud alarm call: tu-tu-tu-tu, tu-tu-tu-tu, ...

Gallinula chloropus - one pair - saw bright orange face plate.

Pezites militaris - 2 - bright coral red breast, brown back, icterid shape.

! Falco femoralis? - a falcon fairly large, w dark underside of wing near body, rufous somewhere on back.

Mimus longicaudatus - 5

?

- maybe flycatcher. White undersides; white above-the-eye line; dark tail; rufous rump; some white on wing coverts; rest grayish. Not too good a look.

Tachuris rubrigastris - (= Sietecolores) one pair

Orchelidon murina - 20 swallows w somewhat forked tail, "dirty" underside

? Was bad light.

Perhaps ♀
P. cyanoleuca?



Carol Pearson

1969

Journal

Papa León Tese

5 July

Phleocryptes melanops - 4 + - acting like a marsh wren in the reeds. White line above eye; not too long beak; something rufous about back parts; buffy outer tail feathers?

Hummingbird catching insects on or close over water, even got his tail wet + flew ~~at~~ away.

6 July

Before breakfast went to beach near Puerto Viejo. In the fields of Dactyloctenium? (a grass) were Pipilo militaris doing flight songs and a flock of Sporophila, at least some S. telasco. Some of these small finch-like things were plain dusky below, + on one there was white in the tail. Something was hiding down in the grass while it sang.

After breakfast we dashed up to Quebrado Cruz de Hueso to find a misplaced box of traps. Seeing the small holes there reminded me I had seen a wasp digging a hole in the sand at the beach.

In late afternoon we went to the beach again with John Davis and Manuel Plenge. I showed them the 4 Burhinus, + they shot one. There were tracks of them all over the sandy parts, not going into the grassy parts, + no holes where they'd stuck their beaks in. (We also saw a few Burhinus tracks along the road from the autopista into San Bartolo.) Today the birds were together and wary, running off while we were a couple hundred yards away at least.

We saw a pipet doing flight song.

Found 3 eggs on beach in a "nest" - pointed, 1 1/2" long,

Carol Pearson
1969

Journal

Papa León Tree

6 July

earthy yellow with brown + black speckles; 3 of them.

Sanderling on beach. Also Larus modestus (many) and a few L. belcheri. (with gray heads + black on tails + black + red on beak).

Up from the rocks by Puerto Viejo village we saw Sula variegata, L. m., L. be., L. dominicus (8), Larosterna inca (1), pelicans (8), 1 whimbrel, 2 black oystercatchers, Phalacrocorax gymnoides (20), P. brasilianus (10), Cinclodes nigrofumosus (2). C. nigrofumosus was cavorting out on the rocks right where waves + spray came pouring in but ~~was~~ avoided the water by flying up the rock further at just the right moment. They were walking + picking among the seaweed, mussels, + barnacles.

Also near the beach, from the road we saw 1 condor, ³⁺ ~~some~~ Coragyps, 1 Geranoaetus.

ML, RH, + I went to 5 km² ENE Pucusana to set traps. I set 25 small Shermans, with oatmeal, at 15 paces[±], through Tillandsia + rocks of the ruins.

7 July

We caught nothing.

We all drove up the carretera Central past Casapalca and set up camp at location 2 mi N Casapalca, 14,400 ft., Dept. Lima. ML, OPP, + I went back down to location 2 mi SW Casapalca, 13,300 ft and set live traps. I set 28 lge folding Shermans w oatmeal ~~thru~~ up a steep slope with large rocks, bushes, + some Stipa.

1969

Journal

2 mi N Casapalca, 14,400 ft, Dept Lima

7 July

On The way up The Pimac Valley + while setting traps we saw Metallura phoebe (common), Leptastheneura, probably siliata (4 or so in bushes on slope), Lincolodes either fuscus or atacamensis or both (lots), Zonotrichia capensis (a few in bushes; a pair of small doves; a pair of hawks solid gray on top with especially wide wings; a large hawk with long wings + tail, dark underneath, flapped with tips of wings.

8 July

My traps at 2 mi. SW Casapalca, 13,300 ft. had one Phyllotis andinum (#4 CP), caught along a large rock with both bushes and Stipa nearby. He was still alive after what was a really cold night for us.

The camp at 2 mi $\frac{1}{2}$ N. Casapalca, 14,400 ft (near a train station labelled Chincham) is in altiplano zone - all grasses + a few low bushes + a low cactus. A small river runs down the valley + side streams join it. ^{Rocks plentiful.} In a couple hours birdwatching in the middle of the day I saw some things I could identify using Koepcke:

Falco femoralis - one lge falcon with buffy headstipes, all gray back.

Muscisaxicola alpina - 10 - slender, upright; run on ground or sit on rocks; dark gray ~~top~~ crown + nape; lighter area in front of eye, perhaps some dark behind eye; Pale gray underside; gray back; ~~dr~~ gray-brown wings; dark gray tail with light outer web sometimes seen.

Upucerthia validirostris - 5 - long, down curved beak; plain brown, darker above. Hops very fast on ground.

Hammers ground with bill.

Carol Pearson
1969

Journal

July 8

2 mi. N Casapalca, 14,400 ft, Dept Lima

Nothoprocta ornata - 2 - a small one quail-size that followed a larger one; no yellow marks on back.

These just walked cautiously up a rocky, Stipa hill.
Asthenes chumilis? - 4 - acting like a Cinclodes, hopping on ground in grass, bushes, rocks, cocking tail. These were ~~shyer~~ more shy, or stayed hidden more than Cinclodes. Blain brown above with faint streaks on back; inner buffy line above eye; cheek + throat streaked against buffy background; dusky undersides; no white in wing + tail (that I saw).

Cinclodes sp. - 12 - commonest bird, most conspicuous because of its sitting on rocks, trilling, + flashy white in its wings as it flies. Dirty white line above eye + below eye on throat + cheek; white on breast getting buffier on abdomen; ~~Rus~~ rusty rump?

Ochtheca oenanthoides - 2 - sit tyrant-like on rocks + fly out to catch flies. Rusty below; dark brown above; white lines above eyes that ~~be~~ meet at base of beak.

Phrygilus unicolor - 2 - plain gray large finch. I figured it this after OPP said Phrygilus acted like towhees. ~~It~~ They were hopping on the grassy ground near the river.

Phalcobaenus albobularis - 3 - a young + two adults flew over.

Carol Penn
1969

Journal

2 mi N Cosapalca, 14,400 ft, Dept Lima

July 8

I set 15 small Shermans with oatmeal + 12 ~~snap~~ traps with cornmeal up a creek coming out of a gully near camp. (Where RH trapped last night) This was Stipa + rocks + in ^{wet} some places close green ground cover. There were old large rodent droppings not big enough for guinea pig.

July 9

Traps caught 4, I guess. I only got one, Phyllotis darwini in a snap, + something carried off 3 snap traps. → (#5 CP) All the mice we've got up here have loads of red mites.


We descended to The foggy zone early morning. It turned out to be a sunny day even there. I saw Pygocichla yanolencia as soon as we got to The fog-smog below (town that starts with "C").

Papa León Trece

At dusk I set 28 small Shermans at 15 paces with oatmeal at The top of a hill at 4 km. ENE Pucurana. This was all very rocky (lichen-covered) with dots of cactus. We saw a couple bats and heard 2 strange bird night noises.

July 10

These traps caught one Phyllotis amicus. (OP put up). There wasn't anything unique about the place it was caught.

All morning we tramped over the desert 8 mi SE Chilca, setting up a grid. I looked under Tillandsia bushes and found large wolf? spiders, small spiders (2 kinds), silverfish, small scorpion. Also an old reptile egg about  this big. And lots of piles of curly-Q bird droppings, where perhaps birds roost. There were lots of Burhinus tracks, + tracks of a large ^{4-toed bird} ~~passerine~~ (tracks 3 1/2" long).

Carol Pearson

1969

Journal

Papa León Trase

July 10

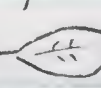
Mid-afternoon we went up the valley, where the lilies were still going, but beginning to fade, (8 km ENE Pucusana). The fog was lifted so we could see even to the tops of the hills.

Saw ^{Vulture} Condor (1), Pygocchelidon & cyanoleuca (10). Also 3

Geositta peruviana maritima: med.-sized; runs ^{hops} for ~~walks~~ almost continuously on ground + grass rocks, occasionally slightly cocking tail; attention directed groundward, hunched a little forward; occasionally catches fly with a flutter; plain grayish brown back, blackish tail, dusky undersides whiter on throat, faint eyeline. Heard a song like a house wren.

July 11

Spent part most of morning tramping around Tillandsia desert 8 mi SE Chilca, looking under plants and digging in holes. I found about 4 or 5 kinds of spiders, 3 scorpions, silverfish, a very small cricket, an insect like a velvet ant sort of - all these under plants. I didn't notice any pattern of distribution, + all ^{spiders} were about equally common except one very large one that got away + lived in a hole about 1 1/2" diam. On a part of the desert that has dirtier soil with a crust on it there were holes like at Quebrada Cruz de Hueso, + in one of these I found a gecko.

Early afternoon we went ~~to~~ up the valley to 8 km ENE Pucusana, + I climbed up ^a the ridge there that has loma vegetation on top (some hills are just cactus). On the high slopes + top of this ridge were lots of lilies among the rocks, a bromeliad, mostly dead masses, on the ~~at~~ outcroppings, a few small + gnarled trees with broad  leaves, one

Carol Pearson

1969

Journal

Papa León Tree

11 July

spring legume type tree, + a few bushes. It was a day of high, light fog, so I could see the ocean + lots of hills, + it was warm. I saw no signs of mammals except small diggings, skunk-like, at some bulbs. I found a dead + a live tarantula-like spider living in ~~cracks~~ holes or burrows. Also a small ($1\frac{1}{2}$ ft) snake, slender, brownish black with 2 dull yellow stripes. Up on the rocky cliffs was a Geositta with rufous in its wings; it fluttered its wings while making its loud, chattering[?] noise. It also makes a strange "wa, wa" call. In a tree clump at the very top of the ridge were a pair of Zonotrichia capensis and a pair of Troglodytes aedon, with the ♂ wren singing just like at home. There was another wren singing in the next valley over the ridge. The wren seemed much ^{darker} buffy under on the abdomen than I remember wrens in USA being. Also saw a Condor and a slew of blue + white swallows and the other Geositta probably maritima, and 2 burrowing owls.

Late afternoon we spent on the study plot again. We ~~to~~ saw a lizard, probably like the one I caught this morning off the plot on a hill with bluish rocks. That one this morning ~~had~~ scooted into a Tillandsia when I came along. I started mapping the piles of bird droppings, each dropping a coil or squiggle of a greenish thread about $\frac{1}{8}$ " thick. The whole droppings about $\frac{1}{2}$ - $\frac{3}{4}$ " wide, sometimes with white on top. They occur in piles of maybe 10 or more. AKR, OPP, and I

Carol Pearson

1969

Journal

Papa León Tree

11 July

each found what I think is Burhinus droppings, since I found one in good connection with tracks. These are largish ($\pm 1"$) white blobs or splats. The ones I broke open had some scorpion parts but the rest unidentifiable. The Burhinus Davis put up had nothing in its stomach except some pellet-like things. The 4-toed bird with large feet both walks ^{w short steps} and hops.

12 July

At the study plot for a couple hours in morning. Saw a sparrow hawk. Collected a jumping spider that was on spike of Tillandsia, a scorpion from under one, + a very large wolf? spider in a large hole. I think there are at least 2 kinds of wolf spiders that get quite large.

Middle of day spent climbing mountains at 4 mi ENE Pucusana. The ridge with ruins on top of it (the northernmost ridge) has little cactus or other plants, but the next ridge south has a few bushes and spiny bromeliads and ^{herbaceous} flowers. Up there I found quite a lot of old large rodent droppings spread around, and one fairly fresh. Something had been tearing up tillicia. We caught a lizard in the rocks (see RH).

Late afternoon again at study plot 8 mi ~~SE~~ Chilca. Got another large wolf spider in a hole and saw others on the area in their holes. [see spider page] ML found a bird nest with 2 oval white eggs about $1\frac{1}{2}"$ long. The eggs were sitting on the dead Tillandsia, and the "nest" was edged with fairly large, greenish droppings, a few

Carol Pearson

1969

Journal

Papa León Tree

12 July

of which were like the coiled ones in piles in other places, but most of which were globs about 1" long.

13 July

First part of morning at study area, tramping around off the area + then collecting small arthropods by shaking Tillandsia over a whitish tarp and looking close. I found lots of 4-toed bird tracks, some with 10" stride, others in long trails of 4" steps. Also, piles of a new kind of dropping, fairly fresh: 1" \pm long, $\frac{1}{4}$ " diam., greenish-grayish with white at one end, more or less cylindrical. Also - large rodent tracks and cat tracks. I collected one of the eggs from the nest ML found yesterday, since they were cold + wet this morning, it was all dried up inside.

Small arthropods found: pseudoscorpions, 2 kinds at least; ~~one isopod~~; one isopod; 2 small crickets; a red mite; a good number of very small orangish spiders; one very small jumping spider; collembolus of several colors; a small insect, collembolus-sized, that doesn't jump, grayish.

Returned in late afternoon + tried to pan for small arthropods. It didn't work. Too much junk floated, and, once wet, anything alive would be unrecognizable if you could find it.

In the course of the day saw 4 ~~medium-sized~~ regular-sized passerines fly over.

14 July

The day (turned sunny! about 10 am) devoted to searching for small arthropods under Tillandsia plants at study plot. Morning technique: pick up plant, live

378
9.69

Carol Pearson
1969

Journal

14 July

+ dead parts, + shake vigorously over newspaper; quickly pour through fine screen into pan(s); search with eyeballs through sand in pans and stuff left on screen. This turned up stuff, but not all plants brought the sand below them with them.

Afternoon technique: shake a plant-mat in place, lift quickly, drop KLIM can (12.7 cm. diam) upside down + push in about $\frac{1}{2}$ ", slide something (like notebook cover) under can, pick it up, dump in bucket, pour small portions in pans to search with eyeballs. We tested to see if bichos got squashed or lost when poured with sand by catching ^{live} collembolus, mites, insect A, + spiders, putting them live in the bucket, dumping in some sand, + searching in pans. We found them again. The KLIM can method seems to work, just doesn't catch much because of small area covered.

We found a baby gecko under a Tillandsia; he was about 2" long, + a small white, fragile eggshell was under the same mat. We found 3 other such egg remains during the day. Also found 2 large scorpions in the ^{like grows} flowers course of the day. A lge weevil w snout sunk into a shoot of Tillandsia.

In Popa León I watched a hummer sit in the fig tree out back for 40 min. ^{1:10pm - 1:50pm.} without changing perch. He turned his head from side to side jerkily about 2x/sec. The whole time. Two other hummers were in the tree at various times during this 40 min. When he left, he zoomed off among the Casuarina, catching insects, ignoring the

Carol Pearson
1969

Journal

14 July

Hummingbird feeder in the tree. Something has emptied the feeder once, after about a week. There are Amazilia amazilia. A dead dog on the road in Chilea had attracted about 20 black vultures.

15 July

To study plot on a very cool, somewhat damp, + of course foggy morning. Did one KUM can sample, + then set out a plot to sample lge (relatively) arthropods on. The plot was a circle of radius 12 ft. on sandy soil with large + small Tillandsia mats. We roughly measured the areas covered by mats by assigning geometrical shapes to the mats + measuring the crucial dimensions, occasionally approximating by figuring a plant here would account for a hole there. The search procedure: spread white canvas, shake plants over it, eyeball on canvas + on sand left behind for anything larger than would pass through fine screen. (kitchen sieve). We had 4 or 5 people searching. Did part of the area, then another KUM can sample.

Returned 2:30 ish and did some more lge arth. search. Found small beetles + a caterpillar. Collected everything found under a ⁹mat + pickled separately.

Late afternoon walked on north end of Puerto Viejo beach. Lots of rat? tracks, esp. along cliffs. Crab tracks at the upper edge of the beach go for as far as you can see up stopping. 2 porpoise skulls. Lots of dead gray gulls, some dead pelicans, cormorants, boobies. Lots of live gray gulls (200), Belcher's gulls (3 - two

el cardo

Carol Pearn
1969

Journal

15 July with white heads, as others seen so far, one with dark head + grayish breast), L. dominicanus (1), Sula (50), snowy plover (5), killdeer (heard one), Vultur (1). Ducks on small pond: slender neck, white cheek + front of throat, black? top of head + back of neck, dark under tail, tail lighter slightly from above in flight.

Anas versicolor or bahamensis

Night - returned to study area, walked around back side but saw nada. Hunted spiders + geckos on plot, found some + one respectively. Heard bats + crickets. A large orb-weaver on his web.

16 July Drove up to ~~Lurín~~ Pachacamac to pick up Jorge Reyes and his friend Andrés Mendoza, who guided us up a valley south of Lurín (going past satellite tracking station) to location 20 km E Lurín, 1000 ft. This is a very rocky + steep-sided canyon, this year fairly lush with lilies + other herbs so that people with cattle, sheep, + goats + accompanying dogs had moved in. So no vizcachas, which had been promised, of course. Flocks of Sicalis ~~stashed~~ exploded + zoomed along the valley with loud chattering + settled on the cliffs like insects or bats. Ones I saw were plainish brown, some with yellow wash in front. Maybe 500 of them. A hummingbird whizzed by. Geositta maritima spread evenly all over. Pair Troglodytes musculus. Zonotrichia copensis singing, a few in valley, a couple up side canyon, dif. song than at Papua León. Cathartes aura - one. The valley got dry + barren again up further; the fog got stuck on earlier more western peaks.

Carol Pearson
1969

Journal

16 July

Crotophaga sulcirostris among fields in Hacienda.

To ponds near beach 7 km SSE Chilca 4 pm.

Pyrocephalus rubinus I guess - brown above, coral abdomen + sides,
sat like flycatcher on bush tops. (1)

Pygochelidon cyanoleuca - (50) Zonotrichia capensis - (6)

Muscivora brevicauda - (1+) - running on ground, stopping +
standing alert. long legs. gray above, creamy below, 2 creamy
wing bars, short + dark tail with buffy spots, light in front
of eye. Flicks tail.

Tachuris rubrigastra (1) Phalaenoptilus nuttallii (1)

Pezomachus militaris (10) - flight songs.

Gallinula chloropus - (6)

Rallus sanguinolentus - (1) - long beak

Anas cyanoptera - (2)

Charadrius vociferus (1)

Pipits Small brown finch Things Night hawks (2)
Sanderlings (4) Gray gulls.

July 17

Briefly to beach, saw lots of pipits singing; 3 Cathartes aura
on beach; a dead cormorant with a fish stuck $\frac{1}{2}$ way down its throat;
Podiceps chilensis on ponds as well as common gallinules. Rest of
day on hands + knees searching for large + small arthropods on
study plot. Did lge arthropod counts (8), (12), (13), (14), (15), (16), (17), (18).
Small arthr. counts 6-11. We wonder if time of day
affects results, since we usually find less in afternoon small
samples. Today cleared briefly with in late morning, got
very cool + windy late afternoon. New Things we found: caterpillars,
"wireworm," black beetle, lge green + lge brown leafhoppers,
dead ladybug.

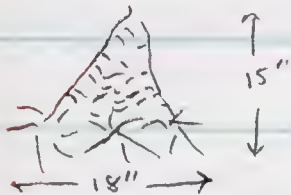
I collected 8 live large-sized pseudoscorpions and put

Carol Pearson
1969

Small arthropods found under Tillandsia
Panning technique
July 14 morning technique

8 mi SE Chilca, Dept Lima, Peru

13 July



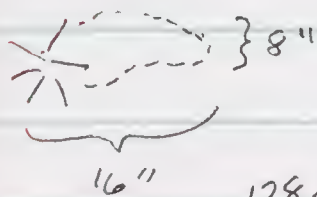
1 red mite

(panning technique)

1 pseudoscorpion

14 July

1.



128 sq. in.

collemboles III

mites II

wlf spider 1

pseudoscorp. 1

mini spiders IIII

reptile? egg - old + empty 1

insect A IIII

Near J 12 on
sandy soil

2.



12"

113 sq. in.

minispider 1

pseudosc 1

mites IIII

coll III

insect A 1

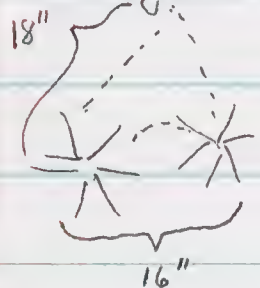
cicada 1

Near J 12 on sandy soil

collembola 1

unknown 1

3.



128 sq. in.

insect A 1

large pink spider 1

mite IIII

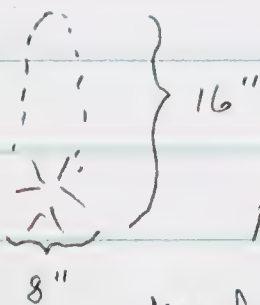
pseudosc 1

collemb 1

leaf hopper 1

Near J 12 on sand

4.



128 sq. in.

coll. IIII

silverfish 1

insect A IIII

mite 1

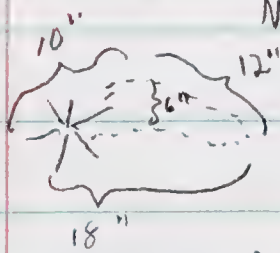
minispid II

small pink spider 1

Near J 12 on sandy (rocky)

collembola 1

5.



132 sq. in.

Near J 12 on sandy slightly rocky

Carl Pearson
1969

Small arthropod counts

KLIM can technique. [14 July PM]

Area covered per trial: ~~1.17~~ ^{1.27} cm²

8 mi SE Chilca, Dept Lima, Peru

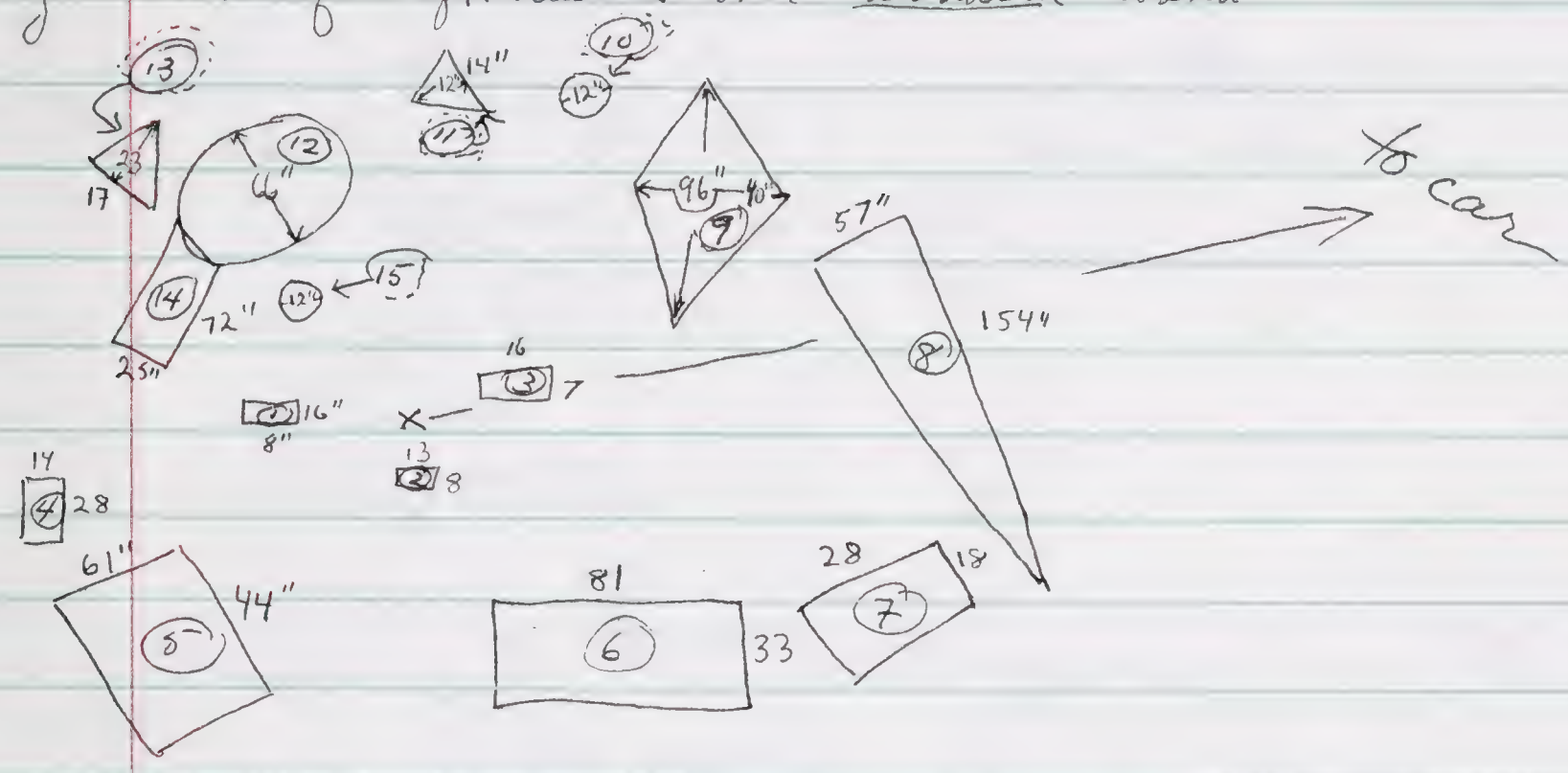
14 July	1.	<u>Tillandsia</u> on sand		Nothing	(5 pm)
	2.	" "		2 insect A	
				1 collembola	
	3.	" "		1 mini spider	
15 July	4.	" "		1 insect A	(730 am)
	5.	" "		1 pseudoscorpion	(1030 am)
17 July	6.	" "	near J8	2 coll collembola	(1330)
				1 minispider	
				[1 MACRO leafhopper small]	
				1 dried up small ant	
	7.	Bare ground, sandy, near J8		NADA	
	8.	<u>Tillandsia</u> on sand	I7	NADA	
	9.	" "	I4	NADA	
	10.	" "	South side	NADA	
	11.	" ^{sandy} on rocky dirt	near A12	NADA	
18 July	12.	" sand	near C3	1 Collembola	9:30 am
19 July	13.	160 sq. in. plant on sand	near C2.	Shake onto canvas.	7:30 am
				3 pseudoscorpions	
				2 collembola	
				1 mite	
	14.	Open sand near C2		NADA	7:50 am
	15.	Open sand near C3		NADA	7:55 am
	16.	<u>Till</u> on sand near E3		1 minispider	8:10 am
25 July	17.	Open sand near	B1	NADA	
	18.	" " "	J5	NADA	
	19.	" " "	K5	NADA	

Carol Pearson
1969

Large arthropod count

15 July

Circle of 12 ft. radius over Tillandsia + sand.



- ① - ~~2~~ big striped - leg ^{wbf} spiders 11
- ~~8~~ ~~4~~ ~~3~~ Thysanura IIII
- ~~1~~ spiders (little) 11
- ~~1~~ jumper insects counted as small crickets 11

128 sq in

- ② Thysanura IIII
- 104 sq in Cricket small 1
- ③ Thysanura IIII
- 112 sq in Spider small 1
- Cricket small 1
- ④ Thysanura IIII 1
- 392 sq in Spider IIII 1
- Gecko? egg shell 1
- Cricket small 11

- ⑤ Spider IIII small med. lge. III
- Thysanura IIII IIII IIII IIII IIII IIII
- Gecko? egg shell III
- Cricket small IIII
- live pupa 1
- Pseudoscorp. III

2684 sq in

Large anthropod count

15 July

(6) Mysorevan

6.73 Min Nymph grasshopper? 1

Pseudoscorpion IIII

Spider Lge 1
 Med IIII IIII
 Small II

Leafhopper? 1

Gecko? egg shell 1

Scorpion! med. small

Cricket small ~~III~~ f

⑧ Pseudoscorpion Lge ~~###~~ ### ### |||
Small

med ||

Cricket small

Thysanura

Spider { Lge 11
Med ~~1111~~ ~~1111~~ ~~1111~~ 1
Small ~~111~~ 11

Scorpion Small # 11 Med. 111

Beetle, ^{Small} large

Caterpillar 1

(Dried ladybug) Leafhopper ^{small}

Gerbil? egg shell

10 113 sq. in.

Spider. sm 1

Thyanura III

Pseudoscorpion 1

⑦ *Thysanura* 4 || |||| |||| ||||

Spider Med 111
Small 1

Cricket small 11

504 sq in.

⑨ Kept bugs 1920 sq. in.

Spider Lg. // med III //

Sum ~~XII~~ ~~XIII~~

Jumping 4

Thysanura ~~||||~~ ~~||||~~ ~~||||~~ ~~||~~ ~~||||~~

Beetle (small) 11/11

Pseudoscorpion THH

Cricket, Small ~~||||~~ ~~||||~~ |||

Gecko egg shell - 1

caterpillar

84 sq in

Spider med 1

Thyramura ~~TH~~ IIII

Pseudoscorpion 11

cricket, small 11/

$$\begin{array}{r} 62 \\ 18 \overline{) 30} \\ \underline{18} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

Cowl Pearson

1969

Lge arthropod count

17 July

(12)

3419 sq in

Scorpion { lge 1
med. 1
small IIII
Spider { med IIII
lge IIII
Thysanura IIII IIII IIII IIII
Cricket { med. 1
small IIII
Pseudoscorpion lge IIII
small IIII
"Wireworm" 1
~~Pseudoscorpion lge II~~
Gecko? egg shell 1

(14)

1800 sq in

+ lge lge --- 1
med III
Spider sm IIII 1
Thysanura IIII IIII IIII
Cricket, med 1
small IIII
Pseudoscorp, lge II
small 1

(13)

Spider, med 1
sm II

Thysanura IIII IIII II
cricket, small 1

196 sq in

(15)

spider { large 1
med 1
small 1

113 sq in

Thysanura II
Pseudoscorpion { small 1
cricket, small 1

(16)

17 July 4pm 15" x 15" square near J7 1/2

225 sq in

All collected.
Spider med II
Thysan. IIII

(17)

56" x 14" near J8

All collected

784 sq in

Thysanura IIII IIII IIII
Scorpion small II
Spider small 1
Cricket small 1

(18)

26 x 28 x 1/2 near A12

364 sq in

All collected. Rocky, earthy, sandy
Thysanura IIII IIII IIII 1
Spider, small IIII
cricket, small 1

(19)

on sand near B3. 62" x 30"

All collected

July 18
8:30 am

Thysanura IIII II
Pseudoscorp. lge IIII
small II
Spider lge med IIII
small IIII 1
Cricket med 1
small IIII
Scorpion small 1
Gecko? egg shell II

1860 sq in

1969

Lge Anth Count

18 July

20

9 am

D 21" radius ^{All collected} on sand near C3

Scorpion Med 1
small $\frac{1}{3}$

693 sq in

Spider Med ~~HH~~ /
small ~~HH~~ III

Cricket	Med	1
	Small	11

Thysanura IIII

(21)

430 pm

60" x 25" All collected on east side. Sandy.

1500 g

Spider sm 441 11

Thyosana -

cricket, small 11/11
 med 1

Pseudoscorpion, s. 1111

Scorpion 1 g.
med 5m. 11

Leaf hoppers lg 1

Cowl Pearson
1969

Journal

Paya León Tree

17 July

them in a jam jar at home, with an assortment of collembolus + insect A + small spider + small thysanuran.

Mymal showed me the most fantastic spider that lives in the old cotton field by the beach. Its abdomen: ~~3:3:3~~ (more or less). More a shape a hemipteran would choose than a spider.

18 July

Foggy, but almost sunny for awhile in late afternoon. Early to beach, saw that duck again - Anas bahamensis because head $\frac{1}{2}$ brown not black, buffy back border on wing. Then to study plot + did lge arth. counts (19), (20) and small arth. count 12. These counts on the west side turned up much fewer ~~th~~ thysanurans. The Tillandsia on this side seems to be shallower, not so much dead stuff buried in sand, more is just one layer sitting on sand.

Late afternoon did another lge arth. count and sat on hill facing NW from 5:30-6:30. Heard flock of about 4 birds go by with a few chirps about 6:00; then about 2 birds with whistling wings like doves; then saw a dove. All heading away from cotton field + orchard toward plot. Before dusk RH saw probably Burhinus fly from down in arroyo to opposite hill. After dark OP + I saw a lge owl come fly above us.

Spent night near study area. During night OP heard barn owl.

19 July

About 6am 4 Pezomachus zoomed in low from south, landed on slope just on plot side of irrigation,

$$\begin{array}{r} 25 \\ 60 \\ \hline 1500 \end{array}$$

Cowl Pearson

1969

Journal

19 July

hopped + walked for maybe 1 min., then zoomed off toward fields. Then a flock of 7 small doves flew north toward fields. Before these, while still $\frac{1}{2}$ light, a hawk flew over.

Did some small earth counts (13-16). 13 was a diff. technique: shake plant on canvas + ~~into~~ + pour into bucket, then search small portions on canvas + in pans. This plant had a drift of sand over part of it. It was a cool + slightly breezy morning. Cleared for middle of day.

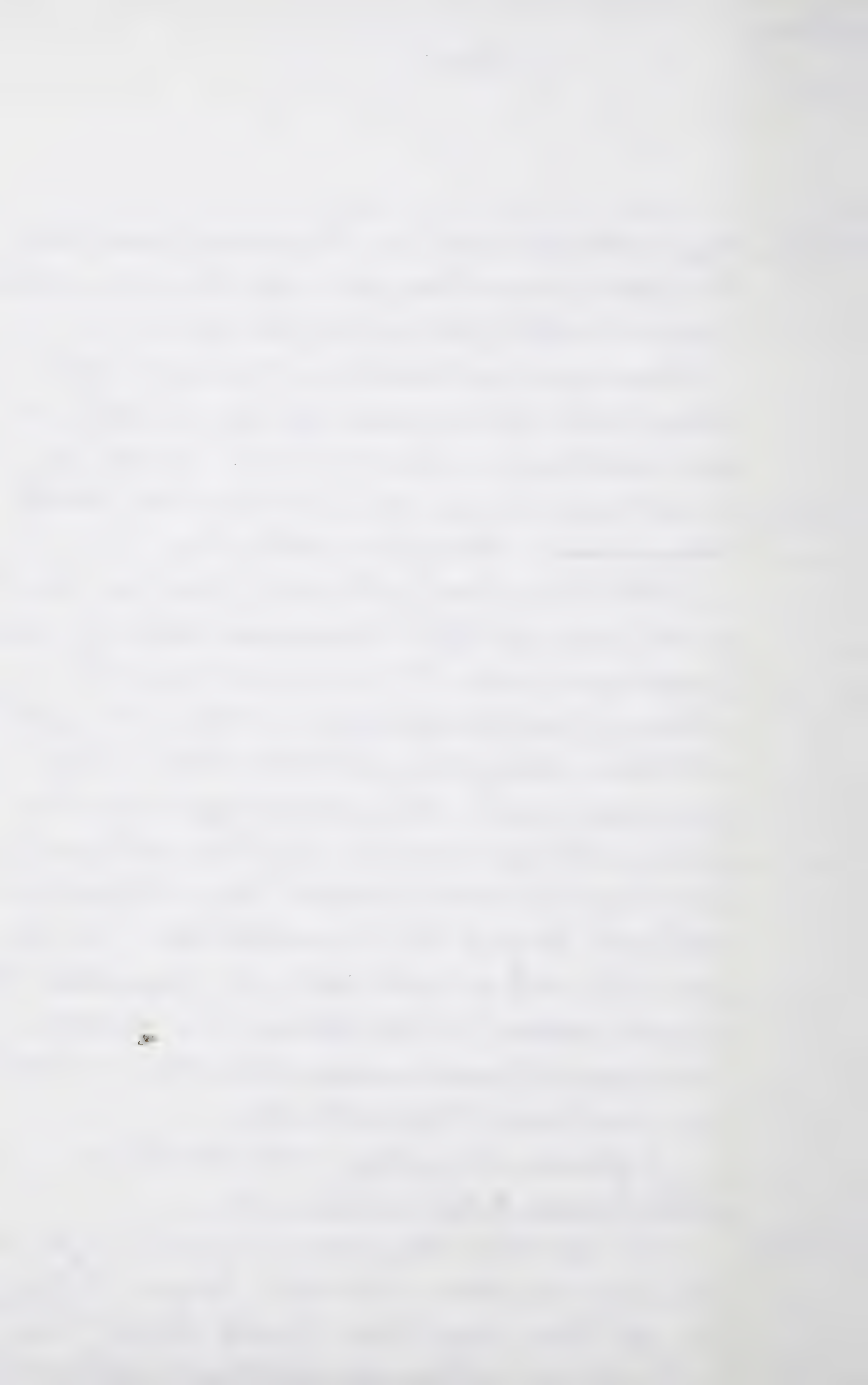
Walked along beach just north of Puerto Viejo. Picked up old porpoise skull (CP 14), cormorant skulls (CP 11, 12, ~~13~~), procellariiform skulls (CP 8, 9, 10), a fairly complete skeleton of small procellariiform? (CP 13). 10: small, white below, black spots on white all over back, black band on end of tail. Also picked up 3 eggs we found on beach awhile ago + were being drifted over with sand. These turned out to have chicks in them, not ~~very~~ rotten, but dead. The chicks had 3 unwebbed toes. On the pond at the north end of the beach were Tringa flavipes (7), Charadrius vociferans (4), Anas bahamensis (7), Charadrius alexandrinus (6), some sandpipers like western. On beach were usual plus 2 black oystercatchers.

To Pochocomac in midday. Cactus hills late pm.

~~5 mi E~~
~~10 km S Yauyos, 9,000 ft., Dept Lima, Peru~~

20 July

Left Pura León early, drove S to Cañete, red fern at the mercado, drove up towards Yauyos but stopped for night before we got there. A really beautiful ^{Rio de Cañete} canyon with lots of almost turquoise water + neat, irrigated fields



Carol Pearson
1969

Journal

5 mi E
~~10 km S~~ Yungas, 8,000 ft, Dept. Beni

20 July along it, sunny, pleasant temp. Saw about 8 condors, lots of doves of various sorts that I don't have sorted out yet, *A. vancejo andino*, *Pyrochelidon cyaneuca*, a flock of small green parrots, 2 large parrots, 2 woodpeckers, lots of mockingbirds, several long-tailed black birds (notanis), a ♀ torrent duck, ^{several} *Tyrannus* ^{small kingfishers.}

The hills above irrigation line were quite bare + rocky (yellowish rocks) for the longest time, and then ~~shortly before where we stopped~~ cactus + *Tillandsia's* come in, + then shortly before we stopped, bushes. Here near the river are Scotch broom + other bushes, pepper trees + others. On the slopes are some kind(s) of columnar - bushy cactuses, pricklypear in places, dead-looking + very dry bushes, agaves, + even a bit of tall grass, dry.

I set 26 lge folding shemoris with oatmeal + 7 traps w oatmeal across a bushy slope with little rocky cover + then up a rocky slide where there was more agave + lge cactus +, up high, some grass (tall + dry). Windy afternoon, but still evening.

21 July. Wind down the canyon most of night, morning. In my traps: live - 1 *Phyllotis andinum* Snap: 3 *P. annuus* (OPP identified). The snaps were at stations with live traps too, toward the end of the line where there was more rocks + lge cactus + agave. One live trap had no bait in it + had mouse droppings in it. I had found one place with a small pile of dry grass.

Set up two mist nets (Bleitz), one between shore

Caul Pearson
1969

Journal

21 July

5 mi E
~~to San~~ Yungas, 9,000 ft, Dept. Lima

and an island in The river (30' net) (N1), and one among willow, pepper trees + Scotch broom by river. (N2)

Thrushes were singing in am; 4 lge parrots flew by.

9:30am - caught Elaenia in N2.

Nets up all day. Sunny + windy all day, wind changing from down to up valley about 2pm. During day saw: Condor (2), sparrow hawk (2), Ceranoaetus (1), Amus andecolus (3), sooty bellied swallows (3), Myiophobus fasciatus (1), Myiarchus tuberculifer (1), parrots (10), Vireo vireo (10), Turdus chiguanco (10), Cinclus leucocephalus (1), Columba maculosa (2), small hummers (1).

I set traps in big bushes along road, both sides: 15 small shermans w oatmeal + barley, 7 snap traps w 7 lge folding shermans w oatmeal.

Saw a bunch of these Turdus hopping on a turfey place by river, just like T. migratorius. Cinclus was a disappointment - hardly bobs at all, didn't go under water, just jumped from rock to rock, getting his feet wet, eating from algae-covered rocks.

22 July

Caught nothing.

About 9am got a Patagona gigas in N1.

Watched 2 dippers in river in front of camp. They were both blotchy brown, + the white on their heads was sort of grayish. Could they be molting, + that's why they don't go underwater? The deeper one got was in up to his belly. A pair of torrent ducks went by camp too. The ♀ quacked. They could have beat us down the Río Cañete. We descended + found we hadn't been where we thought we were, that to get to Yungas you have to turn up the mountain at a town called Magdalena.

23 July

Papa León Truce, Dept Lima, Peru

Cleared + was sunny most of day. RH put up a 30' and x 18' mist nets in back yard + in course of day got 2 Z. capensis (1 adult ♂, 1 ♀), 1 adult ♀ Spizus magellanicus, 1 Empidonax, 1 adult ♀ Pyrocephalus rubinus, 1 ♂ Amazilia arizonae. Saw an ani in the street.

Went to 7 km SSE Chilca (beach) + set about 30 small sherman's w barley at 15 paces ^{around 3 sides of a rectangle} through sparse Distichlis with Salicornia bushes. Lots of skunk, fox, plover tracks. Down on beach saw an injured Anilodes nigrofumosus hopping on sand at edge of waves. We chased him for a long time, up on rocks + on beach, but the closest I got was touching him. There were 2 others there too. Climbed the mountain there, a basically rocky ~~to~~ earthy one with a good view.

24 July

Caught 10 Mus

Went to Lima.

25 July

Sunrise was visible! Through broken clouds, but fog came in for an ordinary day. At study plot did 3 1 km² can small arth. samples + weighed Till. mats to get weights of green and dead parts:

	<u>Area</u>	<u>No green heads</u>	<u>Wgt green</u>	<u>Wgt dead</u>
1.	530 cm ²	3	446 g	525 g
2.	3,017	10	1,370	2,720
3.	322	1 quadruplet	400	290
4.	9,800	11	2,355	3,920
5.	1,133	3	585	620
6.	17,027	19	3,790	10,665

1969

Journal

25 July Papa León Trace / Pomacocha, Yauli Valley, 14,212 ft, Dept Junín, Peru
 Stopped at Hacienda San Andrés + walked up to a Tillandsia sign, B16, made in 1946 according to Cheerful Charlie. Two dark blotchy buteos flew over, + there was a dead barn owl in the orchard.

26 July Up the Pinar, over the pass (Anticona, 4843 m = 15,806 ft), down past Laguna Ducto, where we (Plenge, Davis, me) saw Lophortyx specularioides (2+), Anas flavirostris (30), Anas georgica (2+), Chloephaga melanotos (1), Oxyura ferruginea (5), Ptiloscelys resplendens (2), Lessonia rufa (1 wading in water). The Anas were puddling on mud bars, the goose was just standing around. There were good snow-capped peaks around there. Then down through yellow-grass-covered valleys + more colorful mts to Pomacocha, Plenge's Rod + Gun Club. This is on a fake lake near Yauli, 14,212 ft., with lots of Stipa and rocks.

About 4:30 I set 14 Mus. Specials and 10 West German Rapids with cheese, through Stipa + rocks.

Some birds we saw: Muscisaxicola alpina, M. w rusty caps, Cinclodes fuscus ^{or atacamensis}, Ochthoeca oenanthoides, Phrygilus garhi, Phrygilus plebejus, Catamania inornata? (all gray w yellow-orange bill) (white under tail, brownish, streaky back, fine streaks on crown, faint eye line), Zonotrichia capensis (not singing), Oreotrochilus (landing on ground + flying out to catch flies; blue green tail w white tips, blotchy yellowish back, rusty forehead ^{is pollen?}, ~~rest~~ wings green), Colaptes ruficollis, Asthenes humilis?, Upucerthia sp., + mystery birds.

27 July Caught 3 Akodon in Mus. Spec., one very small so I didn't put it up. Across the lake in a small talus slope we saw a vizcachas, where Ray had shot one yesterday. Also saw Agriornis montana as well as some things from yesterday.

Carol Pearson

1969

Journal

27 July

Pomahuacha, Yauli Valley, 14212 ft., Dept. Junín

Davis + Plenge shot 3 species of *Arctomys*.

Noonish left for La Oroya, where RH, ML, + I got in a collecting + went to Huancayo. Huancayo is in a long, fairly wide + flat valley with lots of planted *Eucalyptus* + ^{a few} *Juniper* trees. Lots of grain + cattle + sheep. Rusty mountains in pastel colors. Pastel orange-red tile roofs. Doves. Sparrow hawks. On the river in La Oroya, ^{the} Mantaro, were some gulls with black heads. Touristed in Huancayo.

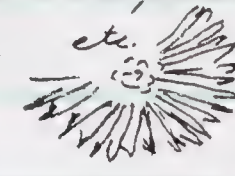
28 July

Took train down to Lima for \$90 segunda clase.

Having a good garúa here.

29 July

Papa León Tree

Early morning went to study area and collected water from in the base of *Tillandsia* leaves. Not all plants had visible collections of water there, + we ~~go~~ could see no patterns to explain which plants had water + which didn't. In the afternoon I centrifuged about 2 ml. for 3-5 min and ^{separated} took off a top, a middle, + a bottom fraction with a dropper. I found no moving things under the microscope (c 100x), but in the heavy fraction were pieces of *Till.* leaf, other junk, + pollen grains? ^{etc.} . I centrifuged some more + put alcohol in with the heavy fraction.

In evening went to north end of Puerto Viejo beach + set up nets for bats, + I went to grid + caught moths. The moths would fly zig-zaggedly a little + then land on a *Till* bush or on the dead part. Once one disappeared down into the dead mat. A little after 6 two flocks of large doves with moiré wings flew by, a flock of about 15, + another of c 30. I bet they landed in the

Carol Pearson

1969

Journal

Papa León Tree

29 July

Till just out of sight. A good garúa was falling.

(AK + OP saw a pr. of Burhenius on the study plot.)

Mid-afternoon went up valley behind Papa León. The lilies are all past, but some smaller things are blooming. The "seedlings" are larger + some blooming. Some fresh burrowing owl pellets.

In morning set 7 mus. traps w/ oats + barley at 12 paces along a heap of med.-sized rocks near a vast pile of old rotten apples across the road from the study area 8 mi SE Chilesa.

30 July

Before dawn to beach to get mist nets, which had nothing in them but caught a bat while we were there. The swallows + hawks were up while it was still pretty dark.

Traps got 2 Phyllotis darwini, 1 Oryzomys, 3 Mus, + 1 that somebody ate.

To Lima in PM. In the J F Kennedy park in Miraflores Volatinia were doing their flight song; There were lge + small doves, A. ~~annexilla~~, Zonotrich, ~~Petrochelidon~~ blue + wh swallows, Passer domesticus; other things; pelicans, gulls, + 2 ^{med.} lge shorebirds flew over.

Hills ↑

Tillandsia study plot
8 mi. SE Chilca



[} = 25 ft.

Road

Carol Pearson
1969

Spiders account
Wolf spiders

12 July

Hole #1: 4pm occupied; between E1 and F1.

Hole #2: Found yesterday; today occupied at 4pm; a large (1" diam) hole between K11, K10 on uphill side.

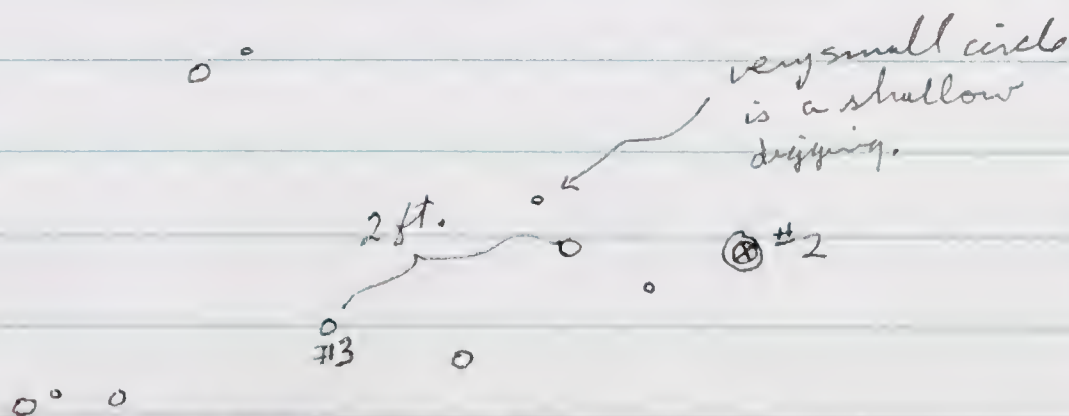
Hole #3: Same location as #2 generally but about 3-3' away in a footprint. At 4pm not a deep hole, occupied by med-sized spider. Two shallow holes with fresh piles of sand were within 2 feet. Yesterday ~~there was~~ I found an incomplete hole about 3 feet from this one, 2' from #2.

When two spiders in separate small collecting vials were shaken together + the mouths of the vials held together, they struggled and the larger ran back into his vial. Then the smaller crept into the larger's jar, touched him, + when the larger reacted, ran back to his own.

Types of ^{large}wolf? spiders: A - mark on thorax and abdomen
B - in holes (like crabs), mark on thorax.

13 July

#2: 7:35 am lots of fresh tracks around it; too deep to see into. Today I noticed some very small scratchings in the vicinity of #2, #3. A map of this area:



Carol Pearson
1969

Wolf spiders

13 July

Are there shallow scratchings made by spiders?

Hole off the area:

o ← 1' → o

2 very shallow holes

2 empty holes

⊙

○

○

Pile of diggings below which was a nest of web holding sand together.

14 July

Hole #4 : 7:30 am fresh digging, med-sized hole w med-sized spider. Incomplete hole 2½' away.

← escape hole?
cave in?



8:00 hole destroyed by foot of human.

Hole #2 : 7:30 am Scratchings for diam. 8", centering on slight mound and plug over hole:



tracks left over from yesterday

15 July

Hole #2 : 7 am Same as yesterday.

17 July

Hole #2 : 12 noon. Looked same from outside. Scooped a little w spoon + found a burrough lined w web + with a trap door That had covered the top. The spider was home.

25 July

Hole #2 : 1300 hrs. Door fixed + spider at home

Pearson, A.K.

1969

catalogue - #600-616

Journal

Peru

W. Pearson
1969

Catalogue

5 1/2 km NE San Bartolo, Dept. Lima, Peru. 100 m

July 2, 1969

600

Gecko

dug out of shallow
blind hole in fine soil on
quebrado bottom

July 3, 1969

601

Gecko

dug out of shallow
hole in hard pan - with
machine gun shell. Quebrado
bottom.

July 4, 1969

602

fox

skull only; pick-up

20 km. E. Lurin, Dept. Lima, Peru 1000 ft.

July 16, 1969

603

vizcachas

mandible; pick-up

604

gecko

under rocks

7 km SSE Chilca, Dept. Lima, Peru. 0 ft.

July 17, 1969

605

gecko *Phyllotaxia microphylla*

under cardboard
near beach

606

"

" "

607

"

" "

~~to~~ 5 mi E ⁹⁰⁰⁰
~~to~~ ~~km~~ ~~E~~ Yauyos, ~~8000~~ ft, Dept. Lima, Peru
July 21, 1969

608

♀

Orizoma?

no emb.
196 x 106 x 28 x 19 24g

609

♀

"

no emb.
170 x 85 x 25 x 17 20.5g

610

♀

Phyllotaxia amicus

coll. by C.A. Pearson

no emb.
190 x 118 x 25 x 20 18g

+ chromos.

611

♂

Phyllotaxia?

(long-tailed *amicus*)

testis 4 mm.
208 x 117 x 26 x 20 26g.

JK Pearson
1969

5 mi E Yungos, 9000 ft., Dept. Lima, Peru
July 22, 1969

+ chromo.	612	♂	bat.	testis 4mm	92 x 0 x 17 x 18	32g.
+ chromo	613	long-tailed ♂ <i>Ph. amicus</i>	died at ing. (?)	testis 3mm	201 x 111 x 26 x 19	26.5g.

~~7 mi~~
4 km ENE Pucallpa, 0 meters, Dept. Lima, Peru.
July 24, 1969

614	♀ Mrs	no emb., parous, dia ut = 1m.	169 x 85 x 18 x 13	14g.
615	♂ Mrs	test. 4mm	154 x 80 x 18 x 15	11g.

7 km SSE Chilca, 0 meters, Dept. Lima, Peru
July 30, 1969

+ chromo.	616	♀ Rattus	no emb.; parous.	408 x 193 x 42 x 21	206g.
-----------	-----	----------	------------------	---------------------	-------

AK Pearson
1969

1969

1

June 30, 1969

4 km ENE Pucucana, Dept. Lima

Flew to Lima on June 29, arriving 6:30 AM at the beautiful new Lima airport. OP + I + Ray stayed at the Davis home, in the San Antonio district of Miraflores. The house ^{looks} ~~is~~ on a little square ^{park} ~~plot~~ ~~of grass~~ out the front, + on a boys' school soccer field out the back. Shared walls with another smallish house on one side, and an open lot with construction materials in it and a little indian hotel in the corner on the other. We did a bit of shopping, much talking, and organized so that we could take off for the desert in the morning. After picking up Myra + Carl at the airport ~~on the~~ this morning we drove south to a little development just north of Chilca. Chilca is a rather poverty stricken indian town with an interesting combination of adobe as well as you as you drive down the main street. There's a very picturesque church on an undeveloped town square, and a few modernish painted houses, but most buildings ~~are~~ are mud-brick, unpainted and decrepit. Papa Leon B - where our rented house is located, is in a real estate development of maybe 300 ^{identical} tacky-tacky cement box houses. The houses are on enormous oblong lots, many of which have large

AK Pearson
1969

2

vegetable gardens, big structures for raising chickens, etc.

This afternoon we drove across the road to an area where we thought there was Tellandsia. Ray, Carol, & Myrland set out traps while Betty Davis, Dicki & I went to do errands in Chilca (gas, matches, etc.). We met the trappers in the same arroyo at 5:30 - and it turned out there wasn't Tellandsia there, but what we took for Tellandsia at a distance was cactus. We probed around a bit - in ~~several~~ two places someone had been digging and there were mounds of shells. The second of these places we panned about further and could find under the surface of the ground, about 50 ft up a gradual hill, plant remains, pieces of bark & wood, much evidence of a fire, plus lots of shells - many of them too small to have been food items. Great arguments. My theory that the vegetation had been lush at one point & burned over was not widely accepted. Found ⁽²³⁾ ~~one~~ small ($\frac{3}{4}$ ") mandibles with curving teeth set in them - (lizard? fish?); also several scorpion cast skins, little snail shells.

Set 5 snap traps about house - outside.

AK Pearson
1969

3

July 1, 1969

4 km ENE Pucallpa, Dept. Lima

One of the 5 snap traps was sprung, but nothing else. I got to baby sit the house since there were several broken windows and we couldn't lock it up. Swept out the house and fluttered around. Finally the boy came around to fix the windows. I looked around behind the house. The ground is arranged as though someone had great plans for irrigating and growing something, but it seems abandoned. Also an abandoned chicken house is back there. Little (almost none) sign of mice.

This afternoon we went south of Chilca to look again for the perfect Tillandsia place and set traps. OP & I set a line along the highway where we could see lines of mouse tracks. The mice seemed to tramp around every rock that affords them any protection, but you hardly ever find a hole. We turned a number of largeish rocks over, but never found a mouse.

July 2, 1969

Nothing in our traps along the road - altho I suspect several of the traps failed to go off. One of our collapsible Shermans in the Tillandsia caught a Mus, which was tagged and released. The other trappers got 3 more Mus and one Phyllotis.

OK Pearson
1969

4

We spent several hours looking for the perfect Tillandsia site — one area was on an army reservation full of garbage + papers. The other spot was up the Quebrado Cruz de Hueso "upstream" from San Bartolo. We drove up to the end of the garbage-dump-area and found some Tillandsia growing on great sandy ^{hilly} areas on the right, and Tillandsia on a very rocky ^{hilly} areas on the left. While the rest of the crew were examining the sandy area I stayed by the car. Noticed some little holes in the ground and started to excavate a couple. In the second one I looked at I found a lizard — Gecko? The burrow seemed to be blind, and the lizard was about 3" under the surface. The top inch of soil was damp from the constant "garra", under which was a layer of very fine dirt. About 3 inches down was a layer of harder rock — not impenetrable but quite compressed. Subsequently I spent over half an hour digging up more holes but didn't find any more. [#]OP found another gecko, which seems to be a different species, just a little up the rocky mountain. The rest put out traps tonight, but I didn't.

When we were tying the tag on the lizard ^{#600} it vocalized — sort of a low-pitched rasp. Carol had heard it do that earlier, too.

AK Pearson
1969

5

After a bit of lunch we drove up the road east of Papa Leon to the lily field valley, and set snap traps out. Marvelous lichens there, & plants of rocks, but no mouse sign. Steve and I set 10 snap traps around a rock corral wall filled with rocks. Turned over lots of rocks & found nothing but spiders & scorpions. I'm thinking now that spiders make all these burrows, & geckos only use the

July 3, 1969. 4 km ENE Pucallpa, Dept. Lima, Peru

Went back to the Quebrada east of San Bartolo to pick up the live traps from the rocky Lillandsia and set them out again in the sandy Lillandsia. Steve Davis was with us, & while he & OP went off to shoot the 22 I went poking up the quebrada. the relatively narrow, 10 ft deep one which currently is dry but has had water in it fairly recently. Saw some mouse droppings and under a pepper tree found a large collection of pellets & droppings from some sort of bird of prey. A slight mustelid odor was noticeable. I kept excavating the little one inch wide burrows that had produced a gecko yesterday. One had a large (2") scorpion in it, but the others produced nothing. The burrows are more frequent in the sandy soil, and seem to occur in groups. Similar burrows dug in the hard-pan surface all had 50-calibre machine gun bullets in them! Steve was fascinated with these trophies, & set out to find more. We dug up several more and then headed back for the truck. ~~the~~ The final dig produced not only a bullet but a gecko curled up beside it!

Walked around behind the house in the afternoon - saw a vermillion flycatcher and a couple of hummingbirds plus the little doves and the Zonotrichia which are so numerous around

AK. Pearson
1969

6

the house.

(i.e. when it was dark)

After supper we drove back to the Tillandsia area south of Chilca, along the road. As we slowed down on the shoulder of the road to start a U turn, a mouse showed up in the headlights. Carol + Ray went after it down the road while we drove along to provide light. It soon went under a rock and escaped when we turned over the rock. Ray felt sure it was a Phyllotis, and I thought so too, although our identifications are a little shady. We jack-tighted across the Tillandsia area — nothing but spiders. Then a couple of us looked in the holes along the road excavation where our earlier traps had not functioned. A ~~the~~ Mus poked his head up to see what was going on, looked at us a second or so, and disappeared again.

July 4, 1969 4 km ENE Pucallpa, Dept. Lima, Peru


Nothing in our 10 traps around the coral. Ray was the only successful trapper — with one Onychomys. We set out after breakfast to check


the Shermans which had been set in sand +
I found a fox skeleton — somewhat weathered — in a small wash, with a 50 cal. machine gun
Tillandsia — also nothing. ↑ So we went to ^{bullet lying} next to it ^{to get} saved skull

San Bartolo to buy bread, to Pucallpa to look around, and then home again. We decided to go back to the Quebrado Cruz de Idneso to spend the night. Carol wanted to try to see

AK Pearson
1969

7.

a nocturnal bird she has been tracking. I set out 30 snap traps ~~in the arroyo~~: 20 + 3 ^{lizards} in the arroyo, 6 in medium-size Tillandsia, one under the car. We pitched the tent for the night. The 3 large snap traps were set and a collection of very odd droppings. I had found similar ones this morning in the arroyo further west of tonight's camp. They look a lot like fruit:  cross section side view

I found ^{this afternoon} ~~the~~  ~~couple~~ of under a low shrub, scattered over an area of about 2 ft. Many of them have a spot of dried liquid by them on the tan earth. No bird white wash around, maybe 25 pellets in all(?).

Another item of interest was the deep ^{hole} ~~well~~ that the army boys had dug in the quebrado. It was about $1\frac{1}{2}$ yards in diameter and the bottom was really out of sight. Ray + Myrnal went back to investigate and flushed a bat / Ray estimated it ^{from stone-droppings} to be about 500 ft deep. No top or anything to warn you about it.

Excavated a burrow in the side of a sandy hill - it was a straight ± 16 " tunnel with bird droppings and a feather in it.

After dark ($\pm 6:30$) we went out looking for geckos. I set out a line of 21 Shermans more or less in a straight line ~~there~~ across the empty

AK Pearson
1966

8

soft-sand desert where we had found geckos earlier. Before ~~to~~ very long we all had spotted geckos in our ~~beam~~^{flash} lights. The one I spotted "froze" while I kept the spot on him. He made a short dash when I briefly lowered the beam, but after that he stood very still while he and I waited for the rest to come take temperatures, etc. Maybe 5-10 minutes of waiting.

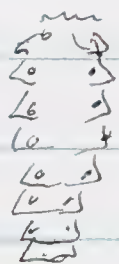
July 5, 1969 4 km ENE Pucallpa, Dept. Lima, Peru

Most of the traps had been rolled of bait, and one that had been under a pepper tree had been carried off into the tree-spring. No mice in my line, although OP caught 2 + Ray caught 1. ~~On the way back~~ Nothing in the Shermans. On the way back from the trap line I excavated a somewhat larger burrow opening in a small ~~spot~~ area of soft sand on top of the hard pan. A lizard (*Tropidurus*?) ran out a back hole and is in our collection. He seemed cold to the touch. Subsequently I noticed other similar holes - large main hole, one or more side holes, not necessarily open. I excavated several, and the tunnels seem to be about 2 ft long from front to back door. They are also deeper than the tunnels in which we have found geckos. Maybe 8-10".

Drove up the valley a little way on the left hand fork to an abandoned chapel. It

1969

was a big and green growing things valley a bit like the area we trapped E of Papa Leon. There was an old stone altar on the hill, with a few wide steps in front of it. The chapel had been built higher above it, with high-rise steps of the local stone leading to it. Inside was a cross with all sorts of symbolic appendages — like 3 dice, a skull and 2 fence carved of wood and nailed on, etc. A rooster was crowing at the top of the cross. Many large snails & snail shells around the numerous corals. And collection of snail droppings in all the places mouse pellets should be. Found a couple of large (O) mouse droppings, but not new or numerous. Saw at least 3 black insect larvae with ² red dots on each segment.



} actual size
 } Black with red dots.
 } Seen eating a snail

Snail seen eating lichen.

Also numerous pupal cases of some insect could be found in crevices in the rocks. Very fragile, usually with a hole in them & cast insect skin inside. Size:



No lizard holes. I turned over several ~~rocks~~ rocks and saw no scorpions either.

~~I spent the evening pulling apart owl pellets.~~

Myrna + I started dissecting owl pellets this

EK Pearson
1969

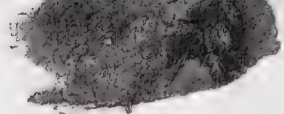
10

afternoon while the sun was out. It was about 20-30 pellets. We counted about 50 scorpion stingers and 86 pairs of front paws. There were lots of little ^{vertebrate} ~~fx~~ bones visible so after supper I stayed home and repainted out the ferra. Comes to about 18 pairs of ferra - gecko size.

We set traps in the late afternoon at a beach a little south of Chilca. The beach is pocked with crab burrows and covered with mouse tracks. The tracks are like little highways through the vegetation. Also caught 2 birds of ligands and found 2 geckos curled up under cardboard (different pieces of cardboard). Set 17 traps along the road (Sherman live traps) baited with oatmeal.

July 6, 1969 4 km ENE Pucusana, Dept. Lima, Peru

Four Mus in my traps. Ray caught some Oryzomys but otherwise lots of Mus only. We drove up to the Quebrada Cruz de Hueso to look for the box of large folding Shermans that was inadvertently left there and picked up a batch of bird of prey pellets to analyze. Marketed in San Bartolo where we also had to change a tire. When we got back to the house we found a note saying the Davis family had been by with Manuel Plenge and his girlfriend Isabel. We lit into our chores of the day and before long the Davis car drove up with everyone aboard. Sat



K Pearson
1969

11

+ talked a while over lunch + coffee and then all but Mupud + Ray drove off to the beach to enjoy the sun + see the Burrowing (sp?) which Carol had seen there this morning.

Beth, Didi, Isabel and I poked around the beach, tracking animals and digging up holes. One conclusion we came to was that the little 2-6" ^{sand} circles of "droppings" (?) were made by spiders. The "droppings" are carefully arranged ~~at a given distance~~ in a perfect circle around a central hole which regularly yielded a whitish-with-~~grey~~ dark spot, sometimes curled up spider. A couple times the spider seemed to couch in a cocoon of sand grains + melting, but frequently the spider ~~just ran off~~ didn't seem to have a "nest". We drove to the cliffs above the resort village of Puerto Viejo and found an old indian burial ground - complete with partially excavated graves + bones sitting around, pieces of cloth, etc. The cut along the road showed ~~indian~~ layers of detritus from indian life over 6' high. Hard to imagine why they chose to live up on that cliff. But fascinating.

July 7, 1969

Nothing in the traps, so we got an early start for the Rincon Valley + high directions. Stopped in Lima at P.O. + Sears and then started up the Valley, passing through the indian section of Lima - incredible. The squatter settlements cover the hills

TK Pearson
1969

12

within

~~for~~ miles ~~into~~ of Lima. Below Chosica we passed above the coastal fog and came to bright sunlight. About 13,500 ft we took a mining road off the main highway & found a campsite. Ray set a long trapline but since I was having faintness problems I put out a short line relatively close to our tent — 13 snap traps and 2 Shermans. The traps run along the bottom of a talus slope and there are big boulders scattered among them.

July 8, 1969

Last of my 15 traps was sprung and empty. ^{nothing in other} The other trappers had better luck, however, so we have numerous mice to inject & squash chromosomes of, etc. It was a bitter cold night to us — maybe largely to metabolic effects of the altitude. The thermometer says -4°C . This AM I set Shermans (16 of them) in the same ichu and boulders as last night's line, although different sets. They are close enough to camp that we can check them and also watch over them as wandering people go by. The mice traps & traps go 24 hours, it seems. A train went downstream this morning, upstream this afternoon. Checked my traps at noon — nothing, and at 5 PM — nothing. So I took up 9 of them to give to one of the other Trappers for the night.

AK Pearson
1969

13

We were doing cyto-Tax work in the tent both afternoon and evening. The temperature dropped spectacularly as the sun disappeared, and we all spent the night in the tent.

July 9, 1969 4 km ENE Pucusana, Dept. of Lima.

Woke up with a mild headache this morning. We broke camp while Carol ^{fixed up} ~~checked~~ her traps (my 7 ^{Shrews} traps had nothing), and headed down the road. Myrna also was having a bad headache - the first symptom of distress she has shown.

We picked up Myrna, Ray, & OP's traps down the road and then went downhill to San Mateo where we had breakfast at a little roadside restaurant.... our first meal out in Peru!

Arrived in Lima about 11, had a wash-up visit at the Davis' house where we also picked up some mail, and then back to Papa Leon Tree.

I drove over to "Cachupell" site where Carol wanted to set some traps. There is an archeological sample on the side of a hill there, showing about $1\frac{1}{2}$ ' of human sedimentation - shell fragments interspersed with dark dirt and fibrous stuff. The site seems sort of strange: neither at the top of the hill nor at the bottom.

Carol & I pulled apart carnivore droppings after supper while the others were working with mice. Among the prey items were (from 5-6 droppings)

K Pearson
1969

14

1 bird, 4-5 scorpions, 2 mice, 1 larger rodent (*reynoldsia*?), grasshopper, other insects with long black ovipositors.

July 10, 1969 4 km. ENE Pucallpa, Dept. Lima, Peru.

The Davis children and Betty arrived pretty early and when Carol returned from her traps we set off down to road to lay out OP's grid. Betty and Didi and I took a long walk around the outskirts of the area - following back up the dry wash to where a road comes in from the apple orchard in the irrigated valley beyond the Tillandsia area. We then undertook to write letters and make identifications on all the posts put out by the rest of the gang.

Drove back to Papa Leon for lunch and after lunch OP took Steve off shooting up in the valley E of Papa Leon while Betty, Carol, Didi and I went and picked tulies and dug up some of the wild begonias for Betty to give to her parasitologist friend Sarmiento.

Spent the evening planning our approach to the grid study tomorrow.

July 11, 1969 4 km. ENE Pucallpa, Dept. Lima, Peru.

Settled down on the grid area this morning to arrange the wildlife, etc. I was specializing on the Tillandsia. The main species (the only one here, perhaps?) grows about 1" tall. The sharp, cupped leaves come off the stem in a spiral - about 3 leaves to complete 360°. An average plant has a cluster

K Pearson
1969

15

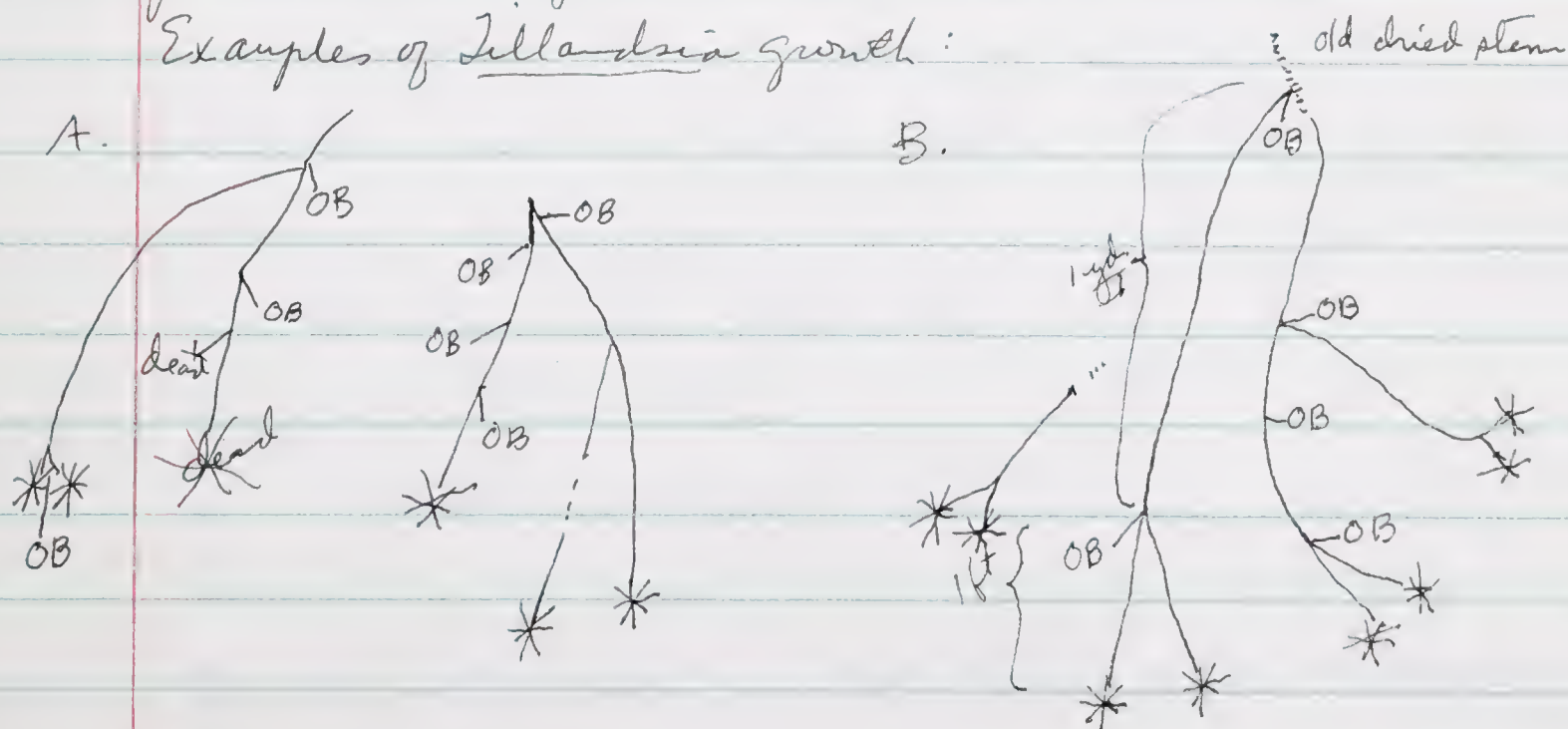
+ about 4 young new leaves in the center of about 20 green leaves gradually looking dead and dead, and then another foot or so of dried leaves on the stem ^{superior the ground} behind it. The growing part of the Tillandsia plants are almost always down the hill from the deader parts.

# leaves	length stem	condition stem
10 green leaves	2.1 cm	1.8 cm dia moist + crunchy
10 dry leaves	2.4 cm	completely dry, 0.8 cm dia
7 dry leaves	1.2 cm	still some moisture

Branching occurs at the inflorescences. These have 8-13 flower clusters (bracts?) growing off the flower stem as do the leaves, in a spiral. Very few good seed pods seem to be formed.

Sometimes a plant divides into 3 or 4 "buds" at the same juncture. Growth from one inflorescence to the next varies from 6" to a yard. Each flower cluster (~~bract?~~) is composed of 12 potential seed pods, laterally compressed.

Examples of Tillandsia growth:





A.K. Pearson
1969

16

Drove up to Lima with John Davis, via the hacienda where Jorge Reyes is foreman. Also stopped at Atacama (where there is a large cement factory), where John climbed up to survey the loma. I sat in the car, which was parked at the lower limit of the lilies. Then into Lima, where we had dinner at the Davis house, joined for dessert and the evening by Manuel Pizarro.

July 12, 1969 Lima, Peru.

A leisurely start on the day - washing my hair, my clothes and myself. Then Betty Davis Didi and I set off for the National Mus. of Archeology... or whatever its name is. On the Plaza Bolivar. After the museum I took them to lunch - and at Betty's suggestion we ate at the Chalet Suisse, where I had a marvelous sopa criolla and ^{de camarones} celiche (marinated shrimp). Back to the Davis house and then to Zolax to do our grocery shopping. To bed soon after dinner, which was lomo saltado fixed by Alejandra - fresh fried potatoes, little fried piece of meat, onion, aji, potatoes mixed together.

July 13, 1969 Lima, Peru.

Started out early for Chacay, north of Lima along the coast, where there is an enormous old burial ground in the process of being despoiled. It looks like an enormous fan-shaped area of

AK Pearson
1969

17

sand on the edge of cultivated fields. Behind the sand are small mountains. The sand hills are pocked with the holes of the ghouls. We parked the car and were immediately approached by a "huacero" with his bag of goods - bit of cloth mounted on paper, pots of various shapes, spinning needles, and a couple strings of beads. I bought one of the last (70 soles) - made from shells, and with a stone (or clay?) pendant weighting down the chain. We probed around the excavations - where mummies, cloth and bones were strewn haphazardly. The dead were apparently wrapped in cotton and then clothes, placed in holes in the ground which were then covered with poles lashed together. The sand and rocks were put back over that roof. Didi and Steve found a couple pots, one of which I kept, and I excavated some small-mammal holes. Never came to the skull, but there was almost a whole skeleton of some unspecialized beast, a smaller ~~pelvic~~ sacrum, a large rat tibia, and a toe nail (very laterally compressed & almost $3/4$ circumference). Anterior? Bones were adult, & seemed too small for fox or dog. Lots of mycochara (?) droppings in the hollows where the graves were.

From Chancay we went to a cactus & rock area on the road to ^{Sayon} ~~Santa Cruz~~ - Churin where John Davis wanted to try to find and ~~Esther~~ (?). We

AK Pearson
1969

18

picked up a batch of hummingbird pellets — (at km 14)
and saw 2 owls. There was lichen on the rocks,
and some snail shells about
but other than a few cactus, no other vegetation.

Drove on up the coast to Lanchay
where there is an Experimental Forest Research
station. From this very barren landscape you
drive east up the ridge until you get to an
area carpeted in a green vine-like thing,
with some grass, eucalyptus, pine, agave, in
addition to ^{some} native trees. Lots of Zonotrichia
singing in the area. Saw scorpions. Shrubs
on the hillside were green with new growth —
I don't know if they are leafless at other times
of year.

Back to Lima about dark.

July 14, 1969 4 km ENE Pucallpa, Dept. Lima, Peru.

Came down to Papa Leon with John this
morning, in time to go out on the grid with
the rest of the crew. I ~~was~~ am in charge of
seed samples (or soil samples) — to determine organic
content of soil samples from different exposures etc.

Carol + I uncovered a very young gecko under a
thick dead mat of Tillandsia. There also was an
almost whole, empty, light blue eggshell near the gecko.

Brought in all my soil samples — collected in a Klein
can (diameter 12.7 cm). Measured the ~~actual~~ amount
of sand in the can and recorded its depth, ~~and~~ the
location of the sample, and the type of soil.

2/R Pearson
1969

19

The samples were sieved through screen wire ($18\frac{1}{2}$ " mesh) and the material that didn't go through the sieve was brought home and put in a paper cup with water. Stirred with a spoon + removed everything that floated. Then drained it on napkins + wrapped in smaller \pm newspaper packages. In the afternoon I helped Carol work out a way to quantify the invertebrates in the soil, + we took a couple samples. Very time consuming, and very few lichos per sample, using a Klin can collector.

Had a marvelous lamb from La Molina for supper - Ray cooked it out back on the fire.

Ingrid fixed cabbage to go with it.

July 15, 4 km. ENE Pucallpa, Dept. Lima, Peru.

While the rest picked up their traps on the grid Carol + I and Didi Davis ~~marked out a~~ took another Small Invertebrate sample and then marked off a circle of 24' radius to census the larger invertebrates in. Carol drew a map showing the main clumps of Till. and we proceeded to shake the areas out, one at a time, over the ground cloth and sorted + killed the invertebrates. Did about $\frac{1}{2}$ the circle before going home for lunch. We found several clumps in which was a broken gecko eggshell, but no geckos. Several scorpions, spiders, pseudoscorpions, Thysanura, and an occasional other insect.

A K Pearson
1969

20

At dark we went back to the grid to mark and count spiders in a couple squares — using eye shine to locate them. Also found one gecko — saw a shadow running in the sand ahead of us. It is entered in Inyral's catalogue.

July 16 4 km. ENE Pucallpa, Dept. Lima, Peru

Off to find Jorge Reyes (the Gobernador de Lurín). From his house (on a vegetable farm near the town of Pachacamac, we went to find Andrés Mendoza who had agreed to go with us to hunt viscachas, & who really knew ^{where} ~~what~~ to find them. So off up the Quebrado de Lurín, along a road which lead through a quarry that was used for rocks for the Atacocha cement mill, past a few clusters of goat herds, and ultimately (says Jorge) to a mine. We parked the car on the road & took off in various directions. I climbed up the southern side of the very steep mountain valley we were in. It wasn't too hard going up, and I saw lots of old viscacha droppings. One little cave-recess had tracks and droppings of viscacha & armouse, and in another small cave I found the viscacha mandible — maybe 100 meters or so above the road. Neither saw nor heard a live viscacha. I didn't go to the very top, since I started worrying about getting down again.

The vegetation was different from the Lachay Loma — here there were lots of different

OK Pearson
1969

21

annuals blooming in the rocks, and the lilies
seeded mainly on the canyon bottom or lower
down. One plant looked exactly like tomatillo, but
no smell (the Peruvians told OP it was ~~potato~~ ^{tomato}).
Another thistle-like plant stung a little like
nettle. I didn't see any Begonia in the area
I was in.

There were two owl or hawk pellets in the
cave where the rinchaca + mouse tracks were, but they
had only insect part recognizable in them.

The hunters were unsuccessful, and after
a picnic repast (Dulce de fresas + Galletas,
fruit, coca cola, + a chocolate bar) we headed down
the mountain again. Jorge Reyes speaks very rapidly
and seems very bright and with a good sense of
humor. Andrés Mendoza we describe as "sweet" — he's
the one who knows more about the animals. When
the two talked together we couldn't get a word of
what they were saying.

July 17, 1969 4 km ENE Pucallpa, Dept Lina, Per.

After the trappers (ML + RH) ^{or checked} picked up their
traps they left the other three of us at the grid
where we counted samples of invertebrates all
day — some large insect samples, some small.
Carol was tabulating it in her notebook, so that's
where it'll be written up.

At the beach this A.M. I picked up a
piece of cardboard & there were 3 sectors of different

AK Peann
1969

22

sizes - one quite small. I put them all in a plastic bag together, and in the course of the ~~the~~ day the smallest gcko's tail was eaten. I also captured a giant ($3\frac{1}{2}$ ") scorpion, which we have pickled for reference purposes.

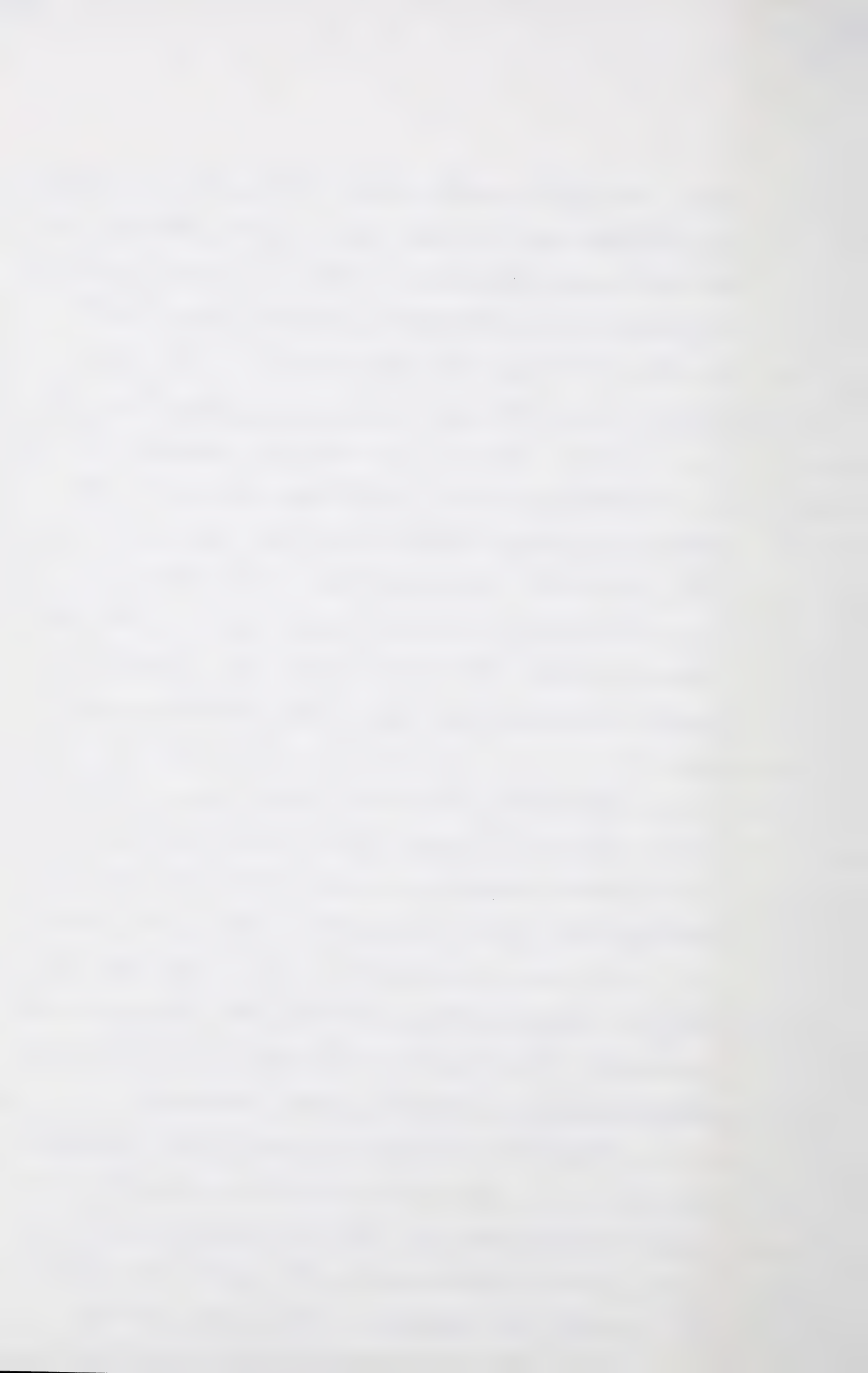
July 18, 1969 - 4 km ENE Perusana, Dept. Ica, Peru.

More counting invertebrate samples on the grids this morning. ~~The~~ We seemed to be getting a different balance in the sample on the A 1-3 slope than we were in our samples from the back side of the hill. More crickets, fewer *Thysanura*. Guess we need more samples from different areas on the grid.

While the others were taking care of the night's catch Canol & I went up to San Bartolo and did assorted shopping. Had dinner at noon in anticipation of a camp-out on the grid tonight.

I have been watering two soil samples in half a 50-gal drum outside the back door. I collected the sample on Tuesday July 15 and started watering it this morn'g.

Slept out on the grid area to see what birds could be seen going to roost there and also to make spider counts. Ray, Myrnel & I drove south to the little beach by the fish meal plant for a while at "sundown". There were lots of grey gulls going to roost on the beach and



h K Pearson
1969

23

bird + crab tracks in the sand. No rodent tracks; and not many dead animals (birds + shell-fish remains) on the beach.

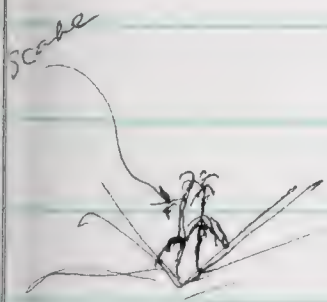
July 19, 1969 - 4 km ENE Pucusana, Dept. Lima Peru
Woke on the grid in time to see 3 kinds

of birds go overhead - Carol identified them. Then started in on more invertebrate counts. The slope of the grid toward the road seems to have fewer *Thysanura* than does the area where Carol + I did our "circle" sample. Spiders seem everywhere. In our count last night we seemed to be finding more spiders than in our first counts, but OP consistently found more than anyone else. The ones I saw mainly seemed to be on sandy areas near *Tillandsia*, but occasionally sitting on top of the dead *Till*.

Trying to figure out the flowering of *Till*, and to be sure there's only one species here. Relatively few of the green ends are going to flower soon, it appears (maybe 5%?). Some that are nice star-shaped flats are putting up a pinkish scape which may be as high as 10 cm, looking a little like a ~~sp~~ rosy asparagus tip. Others, with split heads, seem to occasionally put out a "flower-feather" singly or in very small clusters, coming right out of an axilla. i.e.



"flower-feather" with no rachis, or stalk evident.



1969

Spent a couple hours at Pachacamac visiting ruins. The main temple (to the sun) and the reconstructed convent (Inmaculada) are of Inca origin. The temple to Pachacamac was pre-Inca, and other areas date back to earlier times. The small museum at the entrance had objects from the ruins, including the idol that was worshipped in the temple to Pachacamac. It was of wood, with a human two-faced figure at the top and various stylized serpents, jaguars and birds carved into it. About 6 inches in diameter, & really not very impressive.

Spent the evening filling apart predator pellets picked up earlier this month in the Q. Cruz de Jesus. The pellets were at the base of a 4' cliff, also in front of holes which might have been burrowing owl's. Probably more than one species of bird involved - the pellets were not all the same size, anyhow. Identified below:

- ① 2 scorpions
- ② 2 scorp; 1 Mus
- ③ 3 scorp; > 2 lizards
- ④ 23 scorp
4 liz
- ⑤ 16 scorp.
2 liz
- ⑥ 8 scorp; 1 liz.
- ⑦ 11 beetles > 1 cm; 1 1/2 cm beetle
1 scorp.; 1 myst. mandible
- ⑧ 4 fro. myst. mandible; 1 scorp.

plus about 100 more pellets, more or less the same stuff
plus 3 Mus, 1 small bird.

GK. Pearson
1969

24

July 20, 1969 10 km S. Yungas, 8000 ft, Dept. Lim, Peru.

Left Lima at early this morning for the Cañete valley, on our way up to Yungas or thereabouts. Stopped in Mala to load up on fruit, and in Cañete for other shopping. Lots of Sunday market activity in Cañete. I wish we could have spent more time there. The drive up the irrigated valley was lovely — and you could see ruins on the edges of the valley in many places. Turned north on the road to Yungas and the valley gets more and more narrow, gradually working up through cactus country into some un-irrigated brush. We stopped by the road at stream level and put out traps. I have my traps (36 large folding Shermans, 7 snags) closed around camp — in essentially 3 parallel lines paralleling the creek. Saw bats above us at dusk (little ones) but didn't have to nets up for them.

This AM we picked up a fox skull from a DOR just a little south of San Antonio. The fox was on the side of the road, & a paw had been cut off, and there were human tracks around it.

Saw lots of new birds on the drive today — parakeets (flock), 2 parrots, condors (Cv4), and a torrent duck.

W.K. Pearson
1969

25

A couple of little bats flew over camp at dusk.

July 21, 1969 10 km S Yungas, 8000 ft., Dept Lima, Peru

My 7 snap traps held 3 *Oryzomys*-like mice. Two "long-tailed *Amisus*" in the large Sherman traps - one under a pile of rocks at the base of the hill, the other amid Scotch broom about 10 ft. from the stream. All three of the *Oryzomys* like mice were across the street from camp - under a large rock, along an old stone wall, & in a clump of Scotch broom.

We spent the morning putting up bird nets and skinning and cyto-taxing the catch from last night. There is a curtain of Scotch-broom in bloom all around our camp, a little fastened with grass, where cattle and sheep are grazed. Other shrubs are pepper trees, lognet (?) trees, cactus about 8' tall (pipe stem), large agaves, Tillandsia epiphytes drooping like Spanish moss from other trees. There was mint growing along the river, and caña. Lots of insects around our light at night. It has been a real windy day.

Climbed up the hill behind camp this afternoon, looking for lizards, etc. Saw a kingbird and not much else except fascinating cliff-hanging plants. Two or three species of Tillandsia, little succulents, etc.

Ingram & OP & I set out traps about 1 mile up the road. Along a steep terraced slope with lots of bushes. The stones ^{+ holes} in the stone walls are quite small, so I don't know what we'll catch there. I also put some sets in and around a kind of native tree covered with drooping Tillandsia.

AK Pearson
1965

26.

I put out 25 large Shermans and set three rat traps.

Caught a bat in the mist net Carol + Ray had set up in the pasture. Another caught in the net over the stream got away - it was a smaller species than the pasture-catch. CP checked the nets later in the night + took another out of the pasture-net.

July 22, 4 mi ENE Pucallpa, Dept. Lima, Peru

Went upstream at dawn to check up on traps. I not only caught nothing, but also had a terrible time finding my traps. On my markers. Lost 3 of the folding Shermans.

Broke camp and spent the rest of the day driving back to Papa Leon. Cytotax this evening.

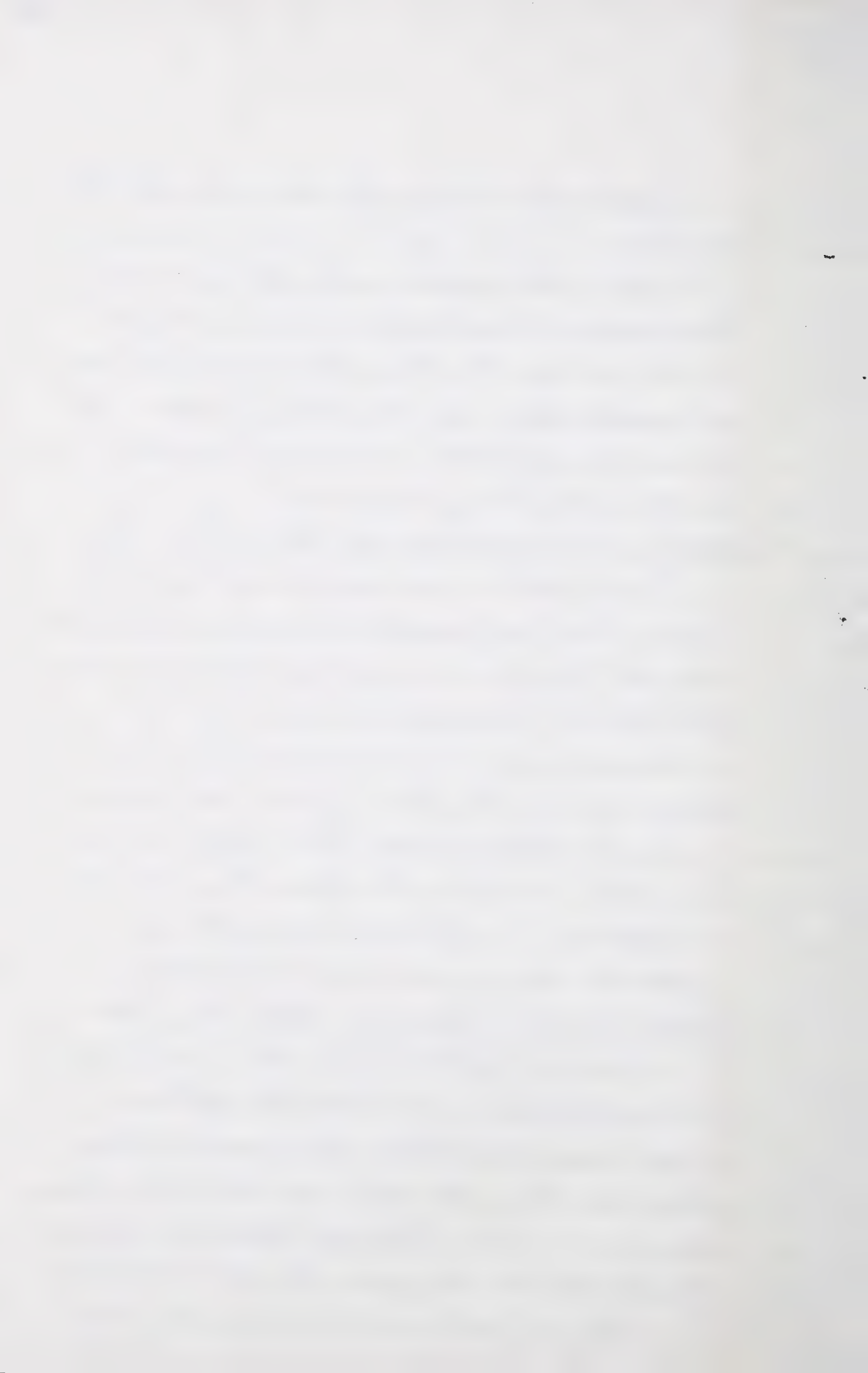
Saw ² ~~3~~ Patagona gigas while fishing up my traps this morning. They were flying above me and perched in a flowering stalk of the giant agave that was so common on my trapline.

July 23, 4 mi ENE Pucallpa, Dept. Lima, Peru

Skinned + cytotaxed this a.m. Carol, Myrnel + I went to trap at the beach this afternoon.

I set 10 large folding Shermans around rocks on the edge of the water where there are lots of big tracks. Another 10 went into Salicornia bushes in Distichlis. The girls climbed way up on the sand-dune cliff.

Ray was netting birds in back of the house today.



A K Pearson
1969

27

upst 2 Mus
the Salicormis
- the big Rattail?
fed. Two kids
+ empty and
rocks where he
lives, however.

July 24, 1969 4 km ENE Pucallpa, Dept Lina, Peru

Spent the day in Lina - shopping for a variety of things and doing odd errands.

OP got a scale to weigh Tillandsia on, and we made some plans with the Donises about this weekend's trip to the mountains.

Dr. Lou Sarmiento and Mrs. Inacado dropped in on the Donises, as did also Manuel Plenge and his novia, Isabel.

July 25, 1969 4 km. ENE Pucallpa, Dept Lina, Peru

Carol, OP and I spent the day on the grid - doing a few more micro-invertebrate counts, and weighing dead and alive Tillandsia. They walked up the road due to see close up the Tillandsia sign which an india told us had been made in 1946. Then back to Papa Leon to wash + get ready for the morning's take-off.

July 26, 1969 - Pomacocha 4200m Dept Junin

Up at 5 and on the road by 5:30. Met the Davis car with Plenge at Chosica and drove on up the mountain together. Arrived at Pomacocha in time for a late lunch at the lodge built by the Pomacocha Rod + Tur Club. The lodge has 3 bedrooms with 2 double decker beds in each, + 2 baths. The main room has a lovely large fireplace, and a 12' wide porch runs around two sides to make a nice



W K Pearson
1969

28

place to eat lunch, and ~~the kitchen~~ to cook.
There were 2 electric stoves, both functioning.
The water system, however, was working only
part of the time, & I don't think we ever
got the hot water going. All in all, though,
it was very comfortable. We set traps out —
Didi, Betty, and I set a line of 27 large-
folded Shermans along the retaining wall
below the path along the lake. Another 10
we put around the house. ... there was lots
of mouse sign under the edge of an overturned
boat, near a pile of wood, etc.

Had a real feast for dinner — all sitting
around the long table in the main room of the
lodge. Didi & I checked the traps around the
house, & caught a Phyllotis darwini fortical
under a chip of ichu at one corner of the
house. OP & I checked some of the other line
later in the evening, but no one was home.

July 27, 1969 - Pomacocha

In the a.m. we found a Calomys in
another of the traps around the house. Nothing
in the other line. Later in the morning (I
had put about 10 small Shermans around the house
to see if we could get some diurnal activity), after
we had not caught any more mice, we all lifted
the overturned boat & grabbed a Neotoma.
Further excavations produced 4 toads ... large
ones.

more like I
set the traps
with brown
tail. I think
maybe pictures.

AK Pearson
1969

29

After lunch we drove the three young people down to La Oroya where they took a collecting for Huancayo. OP + I drove home, stopping briefly at the Davis house. It was sort of a slow drive home. The road was clogged with cars full of picnickers from Lima. It was fun, though, to see the all enjoying the scenery. We got back to Chica about 6:30.

July 28, 1969 4 km ENE Pucallpa, Dept. Lima.

About 8:30 last night there was a motorcade down our street, led by about 100 marching children, some of whom were carrying paper balloons or stars fixed with a candle inside them. The walkers were followed by about a dozen cars, blaring horns etc. I don't know what the how was when the band in the back room started their party, but it didn't break up until after we were up this morning. Munch for July 28!

OP + I went to the grid (first to India to change a battery) + I struggled around while OP weighed + recorded some more things. I am sweating through an attack of diarrhea, and am good for nothing.

The three "ayudantes" got back from Huancayo about dark and OP came back from setting out traps soon thereafter.

July 29, 1969 4 km ENE Pucusana, Dept. Lima, Peru

Feelin' fine today. Went to the grid in a.m., where, thanks to some garins the previous evening we were able to measure the amount of water in a Tillandsia plant, etc. The rest are doing cyto tax while I fiddle.

Back to the north end of the beach in the late afternoon. We strung 2 nets for bats and I set 3 steel + 5 bacon-baited Shermans (large) for the large-track rat. Ray + OP went in a few caves, but found no bats. As soon as it started to get dark, much bat activity by bats flying close around the rocks. Soon caught one in the net, and removed it - a very little Pipistrellus-like(?) bat. Another flew into the net but we tried leaving it there for a few minutes in the hopes it would call in another, but it flew off. We stayed until 7:15, looking for geckos, but with no success.

July 30, 1969

Had a Rattus norvegicus in a jump trap set along the wall of the cave at the high-water line. It was a long skinny female - caught by the back foot. The other traps were undisturbed, + to get into the jump trap she must have gone past a large Sherman baited with bacon and one baited with a mouse carcass. So much for bait. The bat nets had another little

GK Pearson
1969

31

(same as last night's)
bat in it), ~~at us~~ although I thought
I could see 3 species of bats wheeling
around the rocks, they knew the net
was there and easily avoided it. We
had arrived at the beach before dawn,
so got to see all the pre-roosting activity.
Contrary to the other morning when I saw
the bats circling the rocks about 2 ft.
away as they flew, this morning the
bats appeared at the rock where our net
was and then took off in a high, direct
line towards the blackened cliffs toward
the ocean. I suspect they were reacting
to our presence.

We made chromosome squashes of the
two bats + the rat, and then cleared out
of the house. We descended on the Davis
household about 6, and went to a Pizza
restaurant with them and with another
expatriate American (Charles William, AID).

July 31, 1969 - Davis House, Lima

Kuford arrived in the morning, and
the Pearsons + some of the Davis family spent
the time shopping for assorted souvenirs. The
expedition left the Davis home about noon -
as we were setting off for the artisan -
stalls on Avenida de Marina. We had lunch
at an enormous restaurant off of Avenida Brasil -

AK Pearson
1969

32

Piselli's — had anticuchos (heart on
bamboo skewers, in hot sauce). Seemed
like an excellent restaurant.

Took the Dan family to Giovanni's
for supper in the upstairs room, & then
on to the airport.

11- G01 25 1

